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Not Low Consumption, But Big Output Causes Western Refiners' Plight

By J. C. Chatfield
STAFF REPRESENTATIVE

TULSA, June 16

NECESSITY for the curtailment of refinery operations in the Mid-Continent as well as a shut-down of production development is becoming apparent to refiners. Preliminary discussion at a meeting of the Western Petroleum Refiners Association at Kansas City this week showed a unanimous opinion that runs should be cut at least 10 per cent. It is the opinion of many observers the situation demands even more drastic curtailment than has been subgested.

Since the first of the year there has been considerable talk of reducing runs until demand picks up. Estimates have been made that runs were lopped off as much as 70,000 barrels per day in the entire Mid-Continent. There has been a gradual decrease in runs, but it has not assumed the large proportions generally thought. Reports of the Bureau of Mines show that Oklahoma and Kansas refineries were charging a daily average of 236,807 barrels in January. In April this had dropped only 24,770 barrels to an average of 212,037 barrels, the bureau reports show.

It is apparent that every refiner thought it would be wise for his competitor to slow down, but, as for himself, he would run along about the same and hope to sell what backed up before consumption increased. The result was that total runs dropped off only 12.1 per cent in these two states when all estimates indicated that the percentage was double that.

Increased Consumption A Fact

There have been a multitude of predictions that 1923 will see a tremendous consumption of gasoline. Estimates of the increase have varied from 20 to 40 per cent, based on the general prosperity of the country, largely increased registration of motor vehicles and the high rate of production and sales of new machines.

Taking sales of Mid-Continent refineries as a basis for computing consumption, figures of the Bureau of Mines show that, the first four months of the year, consumption exceeded even the highest estimates which have been made. Daily average sales of gasoline from Oklahoma and Kansas refineries from Jan. 1 to April 30 were 3,222,605 gallons. This is an increase of 52.6 per cent over the same period in 1922, when sales maintained a daily average of 2,111,320 gallons.

Production has been kept at such a high level during the period, however, that stocks have been increased. The same statistical source shows that daily average production of gasoline in Oklahoma and Kansas was 4,049,123 gallons from January to April. The excess of production over sales has been at the rate of 826,518 gallons per day. Total stocks of gasoline in the two states have increased 97,934,753 gallons in the four months to the tremendous total of 258,442,475 gallons.

Daily average sales of gasoline by Oklahoma and Kansas refineries during the entire year of 1922, were 2,990,658 gallons. Sales for the year showed an increase of 18.6 per cent over 1921. If gasoline sold by refineries of the two states were to be increased 50 per cent over the average for 1922, to 4,485,987 gallons, stocks on hand on April 30 would be sufficient to run 57.6 days without charging another barrel of crude to stills. Largest sales made during any month in 1922, were in August when the daily average was 3,760,762 gallons. That is 625,000 gallons less than the arbitrary figure chosen above to illustrate stocks in days' supply.

Increased runs of crude to stills do not tell the entire story in explaining the large production of gasoline. Recovery of gasoline from crude charged to stills during the four months has averaged 43.1 per cent. During the first four months of 1922, the average recovery was only 35.1 per cent.

This figure is illuminating as a comment on the efforts which Mid-Continent refiners have exerted during the past year in improving their efficiency of operation by better fractionation and the addition of cracking processes, and the mounting production of high gravity crude which has been available for their stills.

Sales Not True Index

Investigations of conditions in the consuming territory in the Mississippi valley have been made by refiners within the past two weeks to reveal the state of jobbers' storage. In every case the refiners who made a trip through the territory were surprised to find most jobbers with an ample supply of motor fuel on hand to care for current needs. The common statement has

Why Navy Gasoline Is Around 11 Cents

MANY observers, even in the oil trade, knowing from counting new cars on the street that gasoline consumption was way ahead of last year, have been unable to comprehend just why the Mid-Continent refining industry should find itself in its present straits.

This article, written by the **National Petroleum News** staff man who makes a study of the Mid-Continent refined market, goes into fundamental causes that have been accumulating their weight on the situation since the first of the year.

The first stage of consumption—refinery sales to jobbers and brokers—has been ahead of early estimates. Refineries months ago started to make gasoline to fill the 1923 demand, and their efforts increased production ahead of consumption, however. For four months there has been talk of curtailing runs, but the actual decrease has been less than 25,000 barrels a day for Oklahoma and Kansas.

Spurred on by talk of the heavy consumption jobbers bought early for storage, which made refinery sales then a false index. Now jobbers requirements are fairly well taken care of for coming weeks. On top of all this other refining districts, even California, have encroached on Mid-Continent marketing territory.—Editor

been that jobbers have been holding off and keeping their tanks low.

If the information gained on these trips is generally accurate it must be recorded that consumption has not been truly reflected by sales of gasoline in tank cars. On the contrary the situation becomes more serious because the high level of Mid-Continent stocks must be added to the large jobber storage to arrive at an accurate estimate of the reserves of gasoline available to meet retail demand. The fact is that refiners have been led to too great activity by the high level of sales maintained during the first four months of the year.

Given attractive prices and confidently expecting a heavy demand jobbers apparently have gotten their supplies farther ahead than in previous years. It is believed that the small response to the appeal of the emergency gasoline committee of L. V. Nicholas is attributable to the lack of jobber storage room rather than to indifference regarding the wefare of the Independent refiner.

Stocks Constitute Problem

The stocks of gasoline in their tanks constitute one of the most vital problems of the refiner. How is the storage to be financed without too great a burden and how long must the goods be kept off of the market?

It is generally conceded that Cosden & Co., has in storage today between 70,000,000 and 90,000,000 gallons of gasoline. The company has consistently refused to sell at low prices all year and its gasoline has backed up as a result. The physical movement by tank car of that much gasoline constitutes a problem of no small proportions. If the company were to enter the market actively and throw its goods on a market unwilling to receive it there can be no doubt that prices would drop with great rapidity. Refiners generally market at low prices prevailing today believe that Cosden will not enter the and that, if necessary, the storage will be held over another winter. Cosden is an outstanding example, but there are other companies which have as large a problem relatively speaking.

Producers must be considered by the refiners in any plan to curtail runs. Refiners with their own production must consider what is to be done with the crude their wells are producing while stills are idle. Other refiners without production are tied with contracts over considerable periods in many cases.

In the case of refiners with their own crude it is a question of which is the greater of two evils, a large storage of crude or a large storage of gasoline. In a good many cases these companies choose to work up the crude into finished products. Within the past few weeks one refinery with a big crude production purchased an abandoned skimming plant and is running its surplus of crude through that. It had found itself unable to sell the crude to any of the major purchasers.

At the meeting of Mid-Continent refiners at Kansas City this week it was shown that any movement to shut down must be in co-operation with the producers. As a result it is planned to have a conference or series of conferences with them.

A resolution was adopted asking the Mid-Continent Oil & Gas Association to hold a joint meeting with the refiners at Tulsa in the near future. Prior to the meeting a committee is to consider the situation and seek to outline some definite proposal which may be workable. P. M. Miskell, general manager of the Empire Refineries, Inc., is chairman of the committee. Other members are E. R. Perry, vice president of Cosden & Co., W. G. Skelly, president of the Skelly Oil Co., D. T. Buchanan, vice president of the Chestnut & Smith Corp., and A. E. Landsittle, sales manager of the Globe Oil & Refining Co.

No date has been set for the joint meeting as yet. It is expetced that arrangements will be completed within the next week.

Refiners And Producers To Consider Problems At Big Meeting In Tulsa

By Ward K. Halbert
STAFF REPRESENTATIVE

CHICAGO, June 19.—Tentative plans for a record breaking Independent Oil Men's convention in Tulsa on June 26 was the most important outgrowth of the third session of the contact committee of refiners and jobbers here Saturday. There it is hoped something constructive will be started which may result in the solution of the mutual worries of the Mid-Continent producers, the Group 3 refiners and the jobbers of the middle west.

The gathering was first arranged by the Mid-Continent Oil & Gas Association which is purely a producers' organization They are threatened with a proration of pipe line runs as a result of suspended refinery operation. Of course, the Western Petroleum Refiners Association will take part in the meeting. The two branches of the industry are looking to each other for relief in matters of this character.

Officials of the National Petroleum Marketers Association are not sure that the jobbers will take part in the meeting. It is simply a question of expedience. President L. V. Nicholas says he is in doubt as to the jobbers' place in the meeting as an official participant. He says he and a representative number of his directors will attend the gathering if they are wanted and thinks a great many other jobbers will be interested to attend and listen to the proceedings but doubts if the jobbers have any part to play in an affair of producers.

Not a great deal was accomplished at the Saturday afternoon meeting. The original complete personnel of the two committees was not present because refiners are held by high water problems at their plants. Roy B. Jones, refiners' chairman, representing the Panhandle Refining Co., of Dallas was present in person. So was J. A. Corbett of the Sterling Oil Refining Co., Wichita, Kan. W. L. Kistler of the Producers & Refiners Corp. was represented by W. B. Caward, assistant sales manager and George N. Moore of Moore Refining Co. and others.

A. H. Caward, Hawkeye Oil Co., Waterloo, R. E. Osborne, Hastings, Neb., T. A. Clark, Manitowoc, Wis., R. E. Gerkins, Dayton, O., and J. L. Murray, Corn Belt Oil Co., Bloomington, Ill., were present to represent the jobbers along with others not on the original committee. The main topic of discussion was the recent effort of the committee to negotiate a more equitable division of the margin between the price of Oklahoma crude and the average tank wagon. Both groups agreed the effort was a failure but there was a variance of opinion as to who was responsible for it.

Speaking through Mr. Nicholas, the jobbers accused the refiners of not being organized well enough to hold their quotations above bankrupting prices for two weeks while the jobbers were absorbing their surplus. Through Mr. Jones, the refiners accused the jobbers of not being organized well enough to keep their members from buying the sacrifice gasoline dumped on the market at bankrupting prices by brokers instead of patronizing the refiners. The next turn in the discussion was called by John D. Reynolds, secretary of the Western Petroleum Refiners.

Reynolds threw some words of encouragement into the meeting. He pointed out to the refiners that the jobbers had done quite well to move as much gasoline as they did and quoted some general statistics to show the loaded condition of jobber storage in Indiana territory. He pointed out to the jobbers that vacations were at hand, that floods had put a number of plants in the group out of the running and that the tank car situation might prove a bullish element yet. His earnest plea was for the contact committee not to quarrel about unimportant matters but keep working together.

It was at Reynolds suggestion that the next meeting of the contact committee be held in Tulsa on the occasion of the producers gathering and it was agreed that the matter might result in a big three-branch convention of the Independent industry. The committee laid no plans for the interim.

Roxana Awarded Refund

WASHINGTON, June 19.—The Roxana Petroleum Corp. in case 12,722 against the Director General of Railroads and others was today awarded reparation on 125 tanks of crude oil shipped between Jan. 29 and March 15, 1919, from Burkburnett to Roxana on a 36½-cent rate. It is to have 2 cents refunded on each 100 pounds.

The Interstate Commerce Commission dismissed case 13,951 brought by the Atlantic Refining Co. against the director general and the Pennsylvania railroad in which the Atlantic tried to get reparation on shipments of products from Philadelphia to Baltimore and Sparrows Point between April 22, 1918, and Jan. 6, 1920, because the rates through error in publication were higher from Philadelphia to Baltimore than rates in the opposite direction. The commission said they were not unreasonable.

CASPER, WYO., June 16.—C. H. Pearson of Stamford, Conn., representative of the Yale & Towne Manufacturing Co., was in Casper several days in the week calling on the oil trade. While here he has made arrangements for the Northwestern Supply Co. to represent the eastern company in this territory.

THIS WEEK'S OIL NEWS SUMMARIZED

Production

(Detailed Production News, pp. 65-80)

WITH the exception of a 10-cent cut in the price of Sunburst, Mont., crude on June 6, crude prices the country over had been undisturbed since May 14.

One June 18 another break came, the Seep Purchasing Agency cutting prices of all Appalachian grades. Pennsylvania grades suffered a 25-cent reduction and eastern Kentucky, 20 and 25 cents. On June 19, a 15-cent cut in Wooster crude was announced.

Opinion in the Mid-Continent was that a reduction was to be looked for there. Since the Prairie Oil & Gas Co. intimated a week ago that it was considering means of adjusting its position —meaning prorating runs—there has been no material change there. The daily production showed a small decrease last week, easily traceable to the flood conditions prevailing.

Other trouble spots are in sight. Smackover climbed to a daily average of 132,000 barrels last week, against the 85,000 to 95,000 barrels which had prevailed for many weeks. The new Powell field, in Navarro county, Texas, is now rated at a possible daily production of 100,000 barrels by early fall.

In view of all that is ahead and the conditions at hand, there is but one remedy, President Davis, of the Mid-Continent Oil & Gas Association, points out in a letter published on another page of this issue. Progress of considerable importance has been made in the Burbank in shutting down and if this is extended to all fields of the United States there is hope for a betterment of conditions this year.

General Business

CHANGES that occurred over the last week in business generally did not hold out definite indication of the trend. Some recessions in production have been made but those are to be expected at this season.

Unfilled tonnage of the United States Steel Corp at the end of May shows a decline of 307,158 tons during that month. Iron and steel production is slightly lower.

Production of medium and high-priced automobiles has declined but feverish activity is continued by manufacturers of low-priced cars. In fact, the increased output of cars in May is attributed to Ford, Chevrolet and Durant's Star. Tire prices are falling.

Cotton spinning has held up but probably will fall off soon as textile mills have announced early curtailment of output.

Car loadings for the week ended June 2 were 932,041 a decline of 82,000 from the previous week but the average loadings a day were greater due to the May 30 holiday. Loadings showed an increase in building material shipments and the number of building permits have increased, according to the Dodge reports but Bradstreet reports a slight decline.

Wholesale prices are softening as is shown by the Irving Fisher copyrighted index which stood at 159 for the week ended June 15 as against 160 in the previous week.

Last week's report of the Federal Reserve system showed an improvement. The ratio of reserves to deposits and circulation liabilities was 77 per cent as against 75.7 per cent the previous week, and 77.4 in the corresponding week of 1922. A considerable proportion of the increase is due to the gold imports from Germany and England but rediscounts decreased $57,000,000, a reflection of the curtailment which has taken place in business.

Financial

(Detailed Financial News, pp. 139-142)

OIL stocks last week continued to sag under the depressing influence of increasing production. New lows for the years were made by numerous oil stocks and Texas Pacific Coal & Oil fell to a point never before touched by that stock. The statement of R. D. Benson, chairman of the board of Tide Water Oil Co., that conditions in the oil industry now did not warrant a resumption of dividend payments, carried a decline of 16½ points in that stock. A subsequent rally recovered but 3 points.

The victory of the preferred stockholders in the Pierce Oil controversy caused a sharp price upturn in a small amount of trading in that stock. The gain over the week was 6 points.

Not a single stock of the Standard Oil group, traded on the New York Curb market escaped a loss over the week. The heaviest losses were suffered by the South Penn and Prairie Oil & Gas.

Weakness obtained among the Independent shares on the New York Curb, stocks of some producing companies falling new lows.

A few oil company bonds were steady but most suffered losses ranging from a fraction to several points.

The Market Barometer

CRUDE MARKETS

June 18.—Seep Purchasing Agency reduced prices of all Appalachian grade crudes. All Pennsylvania grades reduced 25 cents; Corning 15 cents; Cabell, 20 cents; Somerset medium, 20 cents; Somerset light, 25 cents and Ragland, 10 cents. New prices are:

Bradford-Allegany	**$3.25**
Other Pennsylvania grade	**3.00**
Corning, O.	**1.70**
Cabell	**1.71**
Somerset, medium	**1.55**
Somerset, light	**1.75**
Ragland	**.90**

June 19—Ohio Oil Co. reduced Wooster, O., crude 15 cents. New price $1.90.

Marketing

(Detailed Marketing News, pp. 129-138)

THE floods which last week cut off the gasoline supply of the middle west, were unable to strengthen the gasoline markets outside the affected refining districts—Oklahoma and Arkansas. This situation is the result of unusually large stocks held by jobbers and the large number of cars in transit which carload marketers got out of the Mid-Continent before high waters caused washouts.

The large amounts of gasoline held by jobbers also reveals why they failed to fall in line with the plan of the marketers and refiners associations to take off the market recently about 1000 carloads of gasoline at 13½ cents. A canvass of leading jobbers in many parts of the country has shown them to have in their tanks or under contract about all the motor fuel they can handle. In many cases it would have been impossible for them to handle any additional goods.

Prices are soft in the Mid-Continent and were reduced in Kentucky following Monday's reduction in eastern crude **oil prices, but no immediate re-action** occurred in Pennsylvania as the present price of raw material has been **discounted a week ago.**

Kerosene is in fairly good demand in parts of the country where tractors are coming more into use because farmers must modernize their equipment to overcome labor shortages. Prices have been steady.

Fuel oil is cheaper in Oklahoma and north Texas in order to meet the competition of fuel from Arkansas and north Louisiana. Gas oil is weak in the southwest but the steel mills of the east have been in the market for the Pennsylvania grade of fuel—really a gas oil—and the price has advanced ¼ cent.

Lubricating oils are spotty. Mid-Continent refiners report good demand but in Pennsylvania the market tends to soften. Demand for cylinder stocks varies greatly, and steam refined stocks are accumulating at some plants. The movement of viscous neutral oils continues but new buying is less active.

Rate Suspension Refused

WASHINGTON, D. C., June 19.—The Interstate Commerce Commission has refused to suspend the increased rates on refined petroleum products against which the Standard of Kentucky protested, as published elsewhere in this issue. No explanation as to why it refused to suspend was given by the commission. Apparently the commission accepted the explanation of the railroads that in increasing rates from Jacksonville and Tampa it was merely bringing them to the level they should have occupied had there been no competition by water. That competition has disappeared, hence the advances.

C. A. Gustafson And Associates Take Control Of Marshall Oil Co.

Staff Special

CHICAGO, June 16

THE Marshall Oil Co. of Marshalltown, Ia., was purchased this week by three Chicago oil men who will operate it from here—so far as executive management is concerned. All the financial difficulties of the company have been adjusted and plans made to operate its seven bulk stations and branch offices.

The buyers are Charles A. Gustafson, president of C. A. Gustafson Co.; Fred A. Gustafson, secretary-treasurer of the Star Oil Co., and M. N. Gustavson, president of the Diamond Products Co.

The three men and their respective companies are closely linked together Charles A. and Fred A. Gustafson are brothers and the latter is vice president in the C. A. Gustafson Co. M. N. Gustavson is not related to the other two men by blood, but C. A. Gustafson was associated with him in business long before the organized Anderson & Gustafson Inc., and has continued to own an interest in Mr. Gustavson's business all along. The names are not identical but similar almost to the point of being confusing.

Company History

The Marshall Oil Co. was organized in 1896 and has had a spectacular career. It has grown to be one of the largest Independent jobbing institutions in America. And in the meantime it became well known through advertising and manufacturing specialized oils and greases. There is a compounding plant at every one of the company's stations: Marshalltown, Minneapolis, Fargo, N. D.; Kansas City; Mason City, Ia.; Oskaloosa, Ia., and Lincoln, Neb. Incidentally, the company went in for marketing automobile accessories extensively just before the European war, and acquired financial interest in factories making equipment not related directly to the oil business. Financial trouble overtook the company since.

G. H. Ruth, the president, and G. B. Ruth, secretary and purchasing agent, both sold their interest in the company to the Gustafson-Gustavson combination. J. W. Edenburn, vice president and general manager, and F. W. Ragen, general sales manager, will continue locally in charge of the company's activities, just as before. The sales force of the company has been raised to 62 men and the new organization is going after business. However, the company's name is not going to be changed, nor are the old familiar brands of oils and greases going to be abolished.

The New Management

C. A. Gustafson is known almost everywhere oil is sold. His name has been in the firm name of one of the largest carload marketing institutions in the petroleum industry for many years. He is the Gustafson of the widely advertised Anderson & Gustafson Inc., and subsequently Gustafson & Spencer Inc. Now his company wears his name only. But from among his associates and employees have sprung the heads of numerous carload marketing concerns—large and small.

Fred A. Gustafson is essentially a lubricating oil man. He was head of the Star Oil Co., Chicago, before becoming active in his brother's company by accepting the vice-presidency less than a year ago. The Star Oil Co. never handled the lighter oils extensively but distributed lubricants in Chicago for years, being one of the pioneer workers of the smoke-stack trade here. Being purely local in its activities and ambitions, this jobbing company was never widely advertised, but in its field it achieved an enviable reputation and success.

M. N. Gustafson is a paint man, and recognized as one of the veterans in the business. The Diamond Products Co., is well known in its field of operation, having manufactured a lot of red paint since 1868 when it was founded and began to specialize in the manufacture of barn and railroad paint. It is a direct successor to the George W. Pitkin Co., of Chicago which will be remembered by all the old-timers in the business as a large user of P. & V. M. naptha.

Plans for Future

The relations between the three men and their companies are complicated. Be it sufficient to say they are not partners in all their companies, yet the three men combined hold a controlling interest in all of the companies named. That is true of the Marshall Oil Co. Forty per cent of it is still owned in Iowa.

The changes which will be made in its manner of operation will be made gradually. C. A. Gustafson hinted Friday that some of the expenses of the company which were considered unnecessary, would be discontinued. Among other things, he suggested that the business could get along with fewer grease plants. However, it will continue to handle a full line of lubricants, greases and soaps. Under the new regime, paints, varnishes and stains probably will be added to the line.

The jobbing company will be operated as a wholly separate corporation from the others. The fact that the Star Oil Co. recently bought the Kansas City branch of the Marshall Oil Co., does not indicate that the consuming trade will be confused with an apparent change of management, brands and products. The Star Oil Co. recently arranged for office space on the same floor of the Rand-McNally building with the C. A. Gustafson Co., too, but it is not to be absorbed. It is the open policy of the management to keep the interests separated but closely allied.

Market in The West

General offices of the Marshall Oil Co., are not to be moved from Marshalltown. There the company owns its own office building, erected for the purpose. Besides the Chicago office however, there will soon be offices in New York and San Francisco, it is announced. Among the especially valued assets of the Marshall Oil Co., is the French Auto Oil, which the company made and advertised for years. It is to be given national distribution, according to present plans and C. A. Gustafson's San Francisco office has been instructed to make arrangements to introduce it, and other Marshall products on the Pacific coast.

Lightning Starts Fire At Atlantic Refinery

PITTSBURGH, June 18.—The Pittsburgh plant of the Atlantic Refining Co. resumed operations Saturday midnight after being shut down for several hours on account of a crude oil and gasoline fire started Friday when a tank of crude oil was struck by lightning. The loss to the plant is estimated at $150,000.

The tank struck was of 30,000 barrels' capacity and a little more than half full of crude. The fire spread to a 10,000-barrel tank partly filled with crude and to the auto shop and storeroom, which were destroyed. About half of the crude oil was salvaged.

Late Saturday, the burning crude boiled over igniting four tanks of gasoline but these were extinguished with relatively small loss. Several persons suffered minor injuries but all were able to continue working, plant officials said.

Untermeyer Faction Now In Control Of Pierce Oil

NEW YORK, June 18.—The committee of preferred stockholders of the Pierce Oil Corp. is to meet tomorrow in the office of Samuel Untermeyer in New York when it is expected vacancies on the board of directors will be filled. The preferred stockholders last week won a victory over the Pierce-Doherty-Parker faction in the Supreme Court of Appeals of Virginia. The decision is interpreted to depose immediately the Pierce management.

The preferred stockholders committee is composed of Howard F. Walsh, vice-president, Chase National Bank; Edward R. Tinker, president, Chase Securities Corp.; Moritz Rosenthal, Ladenburg, Thalmann & Co.; Herbert H. Lehman, Lehman Bros.; Alvin Untermeyer, Guggenheimer, Untermeyer & Marshall; Waddill Catchings, Goldman, Sachs & Co., and Ambrose Tight, St. Paul. The deposed directors include: H. Clay Pierce, Henry L. Doherty, Alton B. Parker and A. B. Leach.

The management of the corporation passes into the hands of the preferred stockholders under the provisions of the company's charter because of default in the payment of three dividends on the preferred stock. Suit to retain control was entered last fall by the Pierce faction but the Virginia chancery court, which has now been upheld, decided in favor of the preferred stockholders.

CHICAGO, June 19.—Joseph B. Mudd, Chicago sales representative of the Marland Refining Co., Robert K. Floyd representing Frank Harris Floyd, lubricating oil jobber of Detroit, and J. C. Prendiville, of the Leemoor Oil Co., Morris, Ill., left Chicago for Ponca City, Okla., Thursday night. Uncertain as to whether they could reach Ponca by rail after the flood, they arranged to travel from Kansas City by airplane.

Highest New York State Court Rules Out Curb Pumps In Buffalo

BUFFALO, June 16

WHAT may be one of the most important court decisions in history as it affects the marketing of gasoline, was handed down June 12 by the New York State Court of Appeals, the highest court in the state. The court decided that curb pumps installed on city property, that is in the space between the building line and the curb, are illegal.

The court allowed a writ of mandamus to issue against the mayor and council of Buffalo, ordering them to remove all such pumps in Buffalo. While the decision of the court is of course applicable to the entire state, it will only be operative here at present because it is only in this city that proceedings have been brought to compel the removal of the pumps. The same result would follow action in any New York municipality to abolish curb pumps.

The Standard Oil Co. of New York will suffer by far the heaviest blow to its gallonage of any company marketing in Buffalo as a result of the order because it has by far the largest number of curb pumps in the city. It is estimated that the total number of pumps affected by the ordinance is between 600 and 700 and of these between 450 and 500 are selling Socony gasoline. Gasoline stations whose pumps are not on city property that are handling Standard products are very few.

Of the 100 or so drive-in stations in Buffalo, practically all are either owned by Independent oil companies marketing their own products or by individual dealers selling Independent gasoline and handling tires and other automobile accessories in connection.

Decision Generally Favored

For this reason, the Independent companies generally speaking are in favor of the elimination of the curb pump. They, however, like the Standard of New York, were taken by surprise at the action of the court in finally abolishing the curb pump. They had about the same feeling as the wets had before the adoption of the eighteenth amendment.

It couldn't happen.

But it has happened and the companies are trying to work out the several complications involved to the end that they lose as little gallonage as possible through the changed order of things. One of the complications is that due to the peculiar situation in Buffalo, the order of removal of curb pumps absolutely bars the garage except perhaps in very few instances, as a retailer of gasoline.

Buffalo has a fire ordinance forbidding the installation of a pump in any building and the garages have overcome this difficulty by putting their pumps on the curb. The same is true of tire and accessory stores. In almost every case, the front of the building coincides with the owner's property line and there is no space for a pump on his property outside the building. This leaves such establishments with no place to put a gasoline pump.

While the Standard as before stated, has the major part of such business,

By Paul Truesdell
STAFF REPRESENTATIVE

BULLETIN

BUFFALO, N. Y., June 18.—Called together by A. S. Matthews, president of the New York State Petroleum Marketers' Association, the Independent jobbers of Buffalo held a meeting today at which it was decided to offer no opposition to removing the pumps within 90 days. Mr. Matthews says that court having declared pumps illegal neither city council nor court can grant further extension of time in face of demand of interests back of suit for immediate removal.

Oil men, however, will attempt to have city ordinance changed so garagemen and others in allied business who have no space outside of building on their property for a pump, will be permitted to install pumps in building.

several of the Independent companies have garage and accesssory store pumps that are handling exceedingly heavy gallonage. Many of the curb pumps in Buffalo enjoy a business that probably is not approached by such installations in any other marketing territory, because of the fact that Buffalo, as well as all of New York state, has always relied on the curb pump rather than the filling station for its gasoline supply. How to retain this gallonage by diverting it to drive-in stations handling their products, is one of the problems confronting the Independents.

Another complication in the situation is the fact that there is now before the Buffalo council a zoning ordinance which, if it passes, will absolutely prohibit the installation of gasoline storage tanks either for curb pumps or filling stations within a zoned area that comprises roughly a third of the area of the city.

If this ordinance is passed it will mean that oil companies will not be permitted to put in filling stations anywhere in the downtown district and in a large part of the residential district. Such an ordinance would operate as a gold mine for the companies who already have stations within the restricted district, for the terms of the ordinance as at present drawn do not provide for the removal of tanks already in place.

Another, and probably the most serious aspect of the case, is the intention of the council to rush the removal of pumps to an unreasonable point. Mayor Frank X. Schwab has signified his intention to introduce in council Wednesday night, June 20, a resolution ordering that all pumps affected by the order must be out within 90 days. This the oil companies maintain, is an unreasonably short time. They think they shoult be given at least a year to readjust their business and remove the prohibited equipment.

A. S. Matthews, president of the Pennzoil Co. and president of the New York State Petroleum Marketers' Association, is not certain just what attitude the Independent jobber should take in regard to the order. He was to call a meeting Monday, June 18, of the larger Independent companies in Buffalo to discuss the situation in all its angles and decide on a course of action. Mr. Matthews' company is little affected, having only a very few curb pumps and doing the bulk of its business through drive-in filling stations.

One effect of the court order has been to boom the real estate market for property that is likely or even possible as filling station sites. It is stated that the Standard of New York has acquired around 100 filling station sites in Buffalo recently and will proceed to carry out a filling station program without delay. One application for a filling station installation for the Standard went through the Buffalo council May 31 and another is pending.

It is reported that the Standard has instituted a real estate department to acquire station sites in its Buffalo organization, placing in charge of it the man formerly handling the distribution of pumps, and that this department is exceedingly active. E. D. Emerson, Standard manager of the Buffalo division, however, denies this, stating that he personally is handling all the real estate deals, although he had been besieged with real estate men of all sorts, seeking opportunity to handle the buying of filling station sites for the company.

The origin of the suit that resulted in the court order against curb pumps is unique in that it had its source neither with the politicians nor with the automobile driving public. In fact, the city officials fought the suit because the curb pumps were a good thing for the city as revenue producers, each pump being subject to a tax of from $25 to $75 a year, according to the capacity of its storage tank, under an ordinance passed a year ago. In the aggregate the pumps were worth some $40,000 a year to the city treasury.

Motorists Were Satisfied

The motoring public, too, seemed well satisfied with things as they were. At least, no loud-mouthed representatives arose to start the proceedings in their behalf.

The interest back of the suit was the Drive-in Gasoline Salesmen's Association, composed of 22 members who are proprietors of drive-in filling stations or who operate garages, accessory stores, lunch stands and other such establishments with pumps located on their own property and approached by driveways.

The suit, in the form of a petition for a writ of mandamus to compel the Buffalo council to remove the curb pumps, was filed in the supreme court of Erie county in the name of John Kahabka, president of the drive-in station men's association, and proprietor of a drive-in station on Fuller avenue. The suit was directed toward the removal of two curb pumps in the immediate neighborhood of his place of business. The suit was filed May 29, 1922.

The suit was based on the ground that the two specified pumps located on the curb at Main street and Kensington avenue "were located in and upon

said public streets and the sidewalks thereof by private interests for their own gain and do now exist without lawful license or authority and are unlawful encroachments and obstructions of said public streets."

On Sept. 2, 1922, Justice George E. Pierce handed down his decision in favor of the city and against Kahabka.

Judge Pierce's decision was based on the proposition first, that authority over the streets is in the hands of the legislature and that the legislature had properly delegated that power to the city. Second, that curb pumps were a public necessity. His opinion went on to say:

"The governing body of the city being met by this situation (the general use of vehicles requiring means of replenishing their gasoline supply) is compelled to determine how the automobile user can be served with the least inconvenience and danger to the traveling public both vehicular and pedestrian."

The two present known ways are to have a standpipe at the curb with a tank on private property or under the surface of the street between the curb and the street line so that vehicles can stop at the curb and have their supply of fuel replenished; and the other is to have the tanks and standpipe on private property with driveways from the street leading into the tank and another driveway leading from the tank back into the street.

Gasoline Supply Necessary

"One method involves some hindrance and inconvenience to the people using the paved or traveled portion of the street, the other method involves some inconvenience to the people using the paved or traveled portion of the street and also to those lawfully using the sidewalks or that portion of the street between the curb line and the street line.

"The furnishing of gasoline being a necessary incident to the use of trucks, pleasure vehicles and all kinds of conveyances propelled by the use of gasoline, the use of which is lawful and a proper street use, the city, through its governing board has the right and it is its duty to determine by proper ordinance or regulation which method shall be used or whether both methods can be used and to prescribe what safeguards shall be thrown around the use of either method."

Kahabka appealed the case to the appellate division of the supreme court, fourth department, where the decision of Judge Pierce was reversed on May 2 of this year. Judge Charles B. Sears, who wrote the opinion for the appellate division, took an exactly opposite view from that expressed by the judge of the lower court, as follows:

"The gasoline tanks, while no doubt useful to many persons using the public streets, constitute a non-essential and private use, a use for the gain of the owner of the stand and not a use in a public or even quasi-public capacity. Neither in the provisions of the charter nor any other statute to which our attention has been called, have we found authority to authorize the city to divert the public streets to such private use."

The city, represented by Corporation Counsel William S. Rann, immediately appealed the case to the court of appeals which, without writing an opinion, unanimously supported the decsion of the appellate division of the supreme court declaring the pumps a nuisance and granting a writ of mandamus compelling the city officials to remove them. The two pumps specified in the petition were ordered removed forthwith. They had not been removed today because the mandate of the court had not yet been received in Buffalo.

History of the Suit

In order to understand the history of the pump suit, as related by a member of the Drive-In Gasoline Salesmen's Association, it is necessary to know that Buffalo streets for years have been dotted with wooden newsstands maintained by the newspapers for the sale of their wares under some kind of arrangement with newsboys and of the newspapers with each other. These stands usually are placed near the curb near prominent corners on the main thoroughfares.

Last summer there was a row in the Buffalo newspaper world. Several of the papers lined up together against the Buffalo Commercial which had recently been bought by Charles A. Finnegan. One of the results of the row was that various embarrassments were placed in the way of the sale of Mr. Finnegan's papers on the streets.

As Mr. Finnegan's name indicates he is ready and willing, if not even delighted, to fight for his rights. He carried the war into the enemy's country, delegating Attorney Franklin R. Brown as his lawyer. There was a lively fight through the courts, ending, when the smoke had cleared away, in a decision of the court of appeals to the effect that the newsstands were a nuisance, that they were using the public streets, maintained by public taxation, for private gain.

Evidently Mr. Finnegan did not press for the removal of the stands following the court ruling, because the stands still dot the streets of Buffalo. It is significant, however, that Mr. Finnegan's papers are being sold without let or hindrance along with the rest.

Newsstands Why Not Pumps?

According to the drive-in filling station man, the decision of the court in the newsstand case gave the filling station proprietors an idea. If the use of the public streets for newsstands was illegal, why not for gasoline pumps?

The drive-in filling station men resented keenly the fact that while they were paying taxes and other overhead expenses to maintain their stations on their own property, dealers with no overhead with a site donated by the city and pumps given to them by an oil company, were underselling them and making money.

Franklin R. Brown was retained to put the pump order across and he did it one, two, three as he had in the case of the newsstands. And whereas in the newsstand case there was no one to press for the actual removal of the stands from the streets, there is an exceedingly active organization prepared to press for the immediate removal of the curb pumps. It is the Drive-In Gasoline Salesmen's Association.

In fact, Mr. Brown is so impetuous in his haste to have the pumps pulled out that it irks him even to wait the 90 days proposed by the council as the time limit. He would like to have all of them out in 30 days and he proposes to do it if it can be done.

It is likely that the Independent oil companies, perhaps the Standard too, may take into court a plea that the time allowed is too short and ask for a longer period. That will likely be decided this week.

Meantime, there is a feeling among the oil companies in Buffalo that the curb pump is on the wane all over the country. It is felt that with the number of automobiles constantly increasing and the traffic problem in every city constantly becoming more serious, the curb pump is becoming more and more a traffic obstruction that must give place to the drive-in station.

There will continue to be numerous curb pumps installed undoubtedly but they will not be on city property along the curb line where a car stopping for gasoline may hold up traffic for blocks behind him.

Mr. Emerson voiced this feeling when he said: "It is well known that our company a year or two ago adopted a filling station building program. We have been proceeding slowly but surely with that program. Undoubtedly the feeling causing that change in policy was that the curb pump sooner or later was doomed to go."

Much the same thought was stated by W. G. Weimert, general manager of the Elmer E. Harris Oil Co.

In the meantime, there is little doubt in the minds of Buffalo oil men that the filling station building program of the Standard of New York will proceed just as surely but not slowly the next few months in Buffalo at least.

Hawkeye Oil Co. Of Iowa Extends Its Operations

CHICAGO June 16—Consolidation of the operations of the Hawkeye Oil Co. of South Dakota with those of the Hawkeye Oil Co. of Delaware, so far as the marketing districts in Iowa, Minnesota and Nebraska are concerned, has been brought about by the Producers & Refiners Corp., the parent company of both. Headquarters are to be in Waterloo, Ia., which has always been the headquarters of the Hawkeye of South Dakota.

The difference between the two companies has been only a technical one since the two institutions became part of the P. & R. interests. They were organized separateely and independently.

The South Dakota company is the one headed by A. H. Caward and had marketing stations located over a considerable portion of Iowa. The Delaware incorporation marketed in Iowa but had stations in the southern part of Illinois, Nebraska and Minnesota.

Until recently the one Hawkeye company has been managed by Mr. Caward from Waterloo while the other has been operated through the Chicago office of the P. & R. Now the matter is simplified. The operating office has been moved to Waterloo from Chicago, which places 350 well grouped stations under the Iowa office. The home office and financial headquarters still remains in Chicago.

H. A. Caward is in charge of the Waterloo district and office. His son Walter B. Caward has moved to Chicago as assistant sales manager of the Producers & Refiners Corp. A third story is about to be added to the Hawkeye office building in Waterloo to take care of the increased office force, now numbering 100 employes, and branches are going to be established at Des Moines, Mason City and Ottumwa.

Burbank Shut Down Extended To Protect Unsold Osage Tracts

Staff Special

TULSA, June 16

WITH a shut down movement in full swing in the Burbank field, and with operators rigidly adhering to the agreement, the committee which successfully accomplished those results has just concluded another conference, and has ratified another agreement under which the shut down program is still further extended.

Under this latest agreement, no wells offsetting unsold Osage acreage will be drilled into the sand, drilling wells will be stopped at the next casing point, and no work will be done on locations where active operations have not started.

J. George Wright, superintendent of the Osage agency, of Pawhuska, spoke for the Interior department in urging that this step be taken, if it was the desire of operators that no sale of Osage leases be held at this time. Mid-Continent operators had already advised the department that a sale this summer should be avoided, if possible, and it was indefinitely postponed as a consequence, with the proviso, however, that those unsold tracts which were being drained, might necessarily have to be disposed of at a special sale.

At the meeting, it was pointed out by Superintendent Wright that although a number of locations and drilling wells lying contiguous to unsold tracts had been shut down under the agreement reached several weeks ago, there remained a sufficient number of wells offsetting these tracts to subject the latter to considerable drainage, thus reducing their value. He stated that if it were found impossible to shut down all of these wells, the government, in safeguarding the interests of the Indians, would be forced to offer these tracts for sale before the drainage had progressed any further. At least 17 wells adjoining unsold tracts have been completed in Secs. 24-27-5 and 19-27-6, so that drainage is actively under way, and a large number of others are rapidly approaching sand depths.

Agree to Stop all Work

Rather than to have an Osage sale at this time, the operators decided that the best course to pursue would be to stop all work on wells or locations which might drain the unsold tracts, and agreed to shut down at once. This agreement affects operations on 11 leases, comprising the NE¼ and SE¼ of 10, the NE¼ and SE¼ of 15, the NE¼ of 22, the NW¼ and NE¼ of 23, and the NE¼ and NW¼ of 24-27-5, and the NE¼and NW¼ of 19-27-6, and being operated by the Gypsy Oil Co., Phillips Petroleum Co., Delmar Oil Co., Sinclair Oil & Gas Co., Waite Phillips Co., Carter Oil Co., and Skelly Oil Co.

Under this agreement, not only will wells immediately offseting the unsold leases be shut down, but also the second row of locations back from these tracts, so that there will be no more wells started nor completed in a strip one-quarter mile wide, thus affording ample protection to the tracts in question. A number of wells either offsetting unsold acreage or lying in the second row of locations from them, were included in the agreement heretofore reached by the Burbank operators, but under that agreement a number of corner locations were excepted and allowed to continue drilling. Under the latest agreement, all these wells are included and will be shut down.

This new shut down agreement covers 20 drilling wells not included at the first conference and also prevents the starting of operations on three locations in the NE¼ and SE¼ of 10-27-5 which were left open under the original agreement. This brings to a total of 115 the number of wells actually drilling at the time the agreements went into effect which will be stopped when the next casing point has been reached. This, of course, does not include the large number of potential and practically proven locations where no work is to be started as long as the agreements are in force. About 40 wells which were drilling have actually been shut down at various depths, and possibly half of these would been completed by this time if the shut down program had not been adopted.

Takes in New Area

The pact by which unsold leases are protected from drainage takes in a portion of the field not heretofore included in the shutdown program. The north half of 24-27-5 and the north half of 10-27-6 adjoin four quarter-sections at present unsold, and all operations on the two north rows of locations on these leases will cease under the agreement. Prior to this, the shut down had extended no farther east than the NE¼ of 23-27-5, running from there south through sections 26 and 35. In this new territory about 15 drilling wells will be shut down, of which six belong to the Gypsy, five to Phillips and Skelly and four to Sinclair. There have already been completed in these quarter sections, 17 wells in the two rows of locations mentioned.

It is noteworthy that Burbank reached a new high record in production during the past week, in spite of the shut down and the bad weather conditions prevailing. The field averaged 115,780 barrels a day, from 1012 wells, as compared with 110,245 barrels from 1001 wells last week. It has now again gone ahead of Tonkawa, which is making around 112,000 barrels. Inasmuch

(Continued on page 26)

Statement By William N. Davis

TO THOSE who are producing oil:

I need not enter upon any argumentative discussion with you to establish the fact that there is an over-production of crude oil in this country. You are well aware of it. You are also aware that the Mid-Continent Field is contributing materially to the congestion by an unprecedented volume of production which is taxing pipe line capacity and purchasing ability. Purchasing companies are storing oil at a time when, ordinarily, they would be drawing on stocks; and there are rumors of pro-ration of runs and refusal of pipe line connections. Gasoline stocks are more than 50 per cent greater than they were at this time last year, due largely to protracted wet weather. A continuance of those conditions will bring on demoralization.

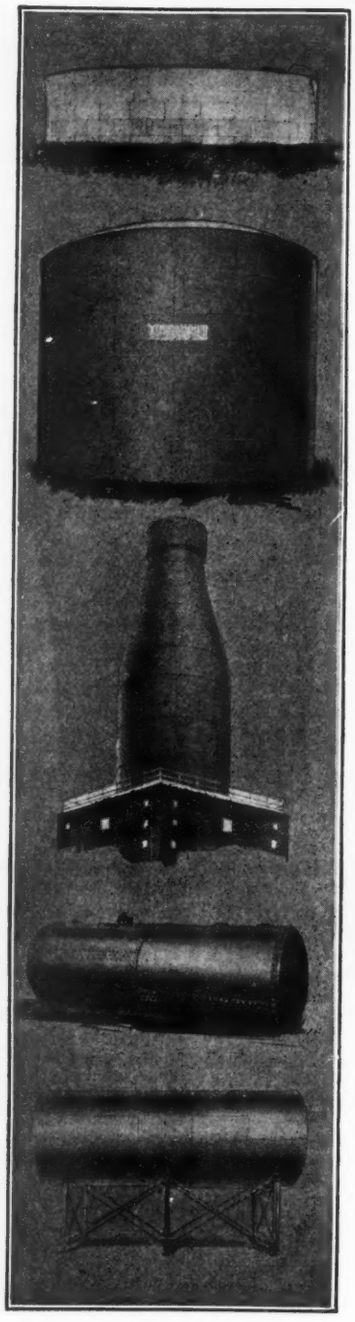
It is the height of folly to attempt to force our commodity onto a market which will not receive it—or if it does receive it, will do so at a price which will spell loss to all producers and bankruptcy to many. There is no duty, legal or moral, resting upon producers which would compel them to glut the market beyond consumption needs or transportation capacity. On the other hand, I regard it as both **illegal** and **immoral** and distinctly foolish to rush on to perdition with an unnecessary drilling program which wastes a valuable unreplaceable natural resource to the future detriment of the public and the industry.

There is but one way to improve the situation. It requires the unselfish co-operation of **every** producing unit. There must be no mental reservations nor cunning attempts to profit through the sacrifice of others. Every operator should shut down. By "shut down", I mean drill no new wells that can be avoided. And many can be avoided—even those on expiring leases—if a conscientious effort is made to obtain extensions from land owners. For what will it profit the land owner to have the well drilled if the pipe line company will not connect or the price is wholly inadequate?

Fortunately we have before us a concrete example of what can be done when producers display a real, sincere and intelligent desire to correct uneconomic conditions. The voluntary shut-down movement in the Burbank and Tonkawa pools is the most constructive and efficient effort of the kind that I have witnessed in my experience of twenty years. These committees have brought about the shut down of over 158 wells and have prevented the starting of many more. Had it not been for this movement those pools would have been beyond pipe line facilities and beyond control today.

What has been done in Tonkawa and Burbank can be done at Bristow, Hewitt, Powell, Texas, and in all the other pools of the field. I, therefore, urge that the producers in each pool confer without delay and without further urging or direction from any source and proceed to outline and put into effect a curtailment of drilling. Make it a real shut down and stay with it until conditions are definitely better. By so doing, you will demonstrate your right to be called business men.

Youngstown TANKS



Strength

Our golden rule of business is to build a quality product, sell it at a fair price and make a profit and back our customer in the service he should expect from the product we sell him. From this policy we have developed a stronghold in the storage tank industry that distinguishes this company as one of the leaders.

In all parts of the civilized world "Youngstown Tanks" are used and they dot the earth in increasing thousands each year. Built in standardized designs in capacities ranging from 400 gallons to 80,000 bbls. these tanks bear an unqualified five year guarantee.

Bulletin 500, illustrates and describes "Youngstown Tanks". It will be mailed free to executives.

THE YOUNGSTOWN BOILER & TANK CO.

No. 5 of a series of advertisements

President

The **YOUNGSTOWN BOILER & TANK** Company
Youngstown Ohio -- U.S.A.

Floods, High Winds, Damage Refineries, Producing Fields And Pipe Lines

TULSA, June 16

TORRENTIAL rains, high winds and floods harassed producing, pipe line and refining branches of the oil industry in Oklahoma and Kansas the past week causing delays and damage estimated at several millions of dollars. Streams have been out of their banks inundating refineries, causing loss of time and damaged equipment.

Producing properties lost heavily from high winds and electric storms. Choked pipelines backed up crude on leases and caused emergency measures to be used in caring for production in some areas. Pipe line pump stations were crippled.

At West Tulsa the Coleman Nelson, Constantin and Texas Co. plants were inundated by water when the Arkansas reached the record flood stage of 19.6 feet. Heroic work in building dykes saved the big Cosden plant from being flooded.

The compression gasoline plant of The Texas Co. operated in connection with the refinery was destroyed by fire with an estimated loss of $250,000. Exact cause of the fire has not been ascertained, since the plant was under water at the time. It is believed that a spark from a Midland Valley locomotive set fire to gasoline floating on the surface of flood waters and flashed back to the plant.

At Arkansas City the Moore Refining Co. sustained losses estimated at a quarter of a million dollars when waters came up quickly. Roxana Petroleum Corp. lost around $50,000 in building materials and damaged construction work at the site of their new refinery.

A 55,000 barrel tank of gasoline at the Kanotex plant caused great excitement when it slipped its mooring and floated down the river, taking a railroad bridge down with it. The tank was located by aeroplane a half mile down the stream where it hung up in a grove of trees.

Chief damage at the Moore plant is from damaged motors and the moving of 12 storage tanks from their foundations. It is thought that this refinery will not be able to resume operations for a week or two. One Dubbs unit was put out of commission when cold water came up on the hot metal.

At Augusta the White Eagle Oil & Refining Co. suffered some damage, but will resume operations soon. At Humbolt the Miller Petroleum Co. plant is still under water and closed down.

Railroads are Hit

Transportation has been tied up a greater part of the week. Gasoline cars were marooned on high stretches of track in some instances. Railroads have been using branch lines and roundabout hauls to move trains. With soft track and light rails on branch lines trains have been kept short and speed down.

Traffic managers of refineries are finding it possible to move their cars with greater dispatch every day now, and it is expected movement will approach normal proportions by the middle of next week. All available men in railroad employ are being used to repair roads and bridges.

Between Tulsa and Sand Springs the compounding plant of the Standardized Lubricants Co. was inundated but loss was negligible. Cars will be able to move in and out of the plant again by next Tuesday.

Flood water did considerable damage to pipe lines and pump stations, as well as to producing properties, and caused delays and difficulties in transportation and communication, through loss of bridges and damage to telephone lines throughout the fields.

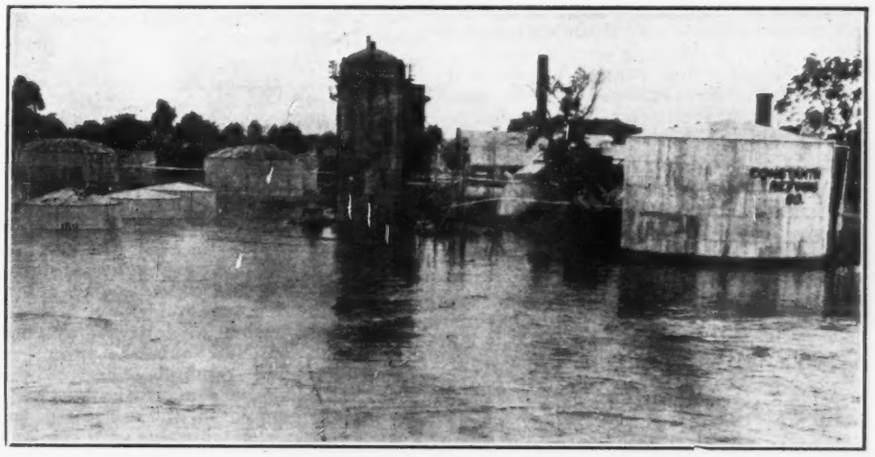
The Prairie Pipe Line Co. apparently was the worst sufferer from the flood. One of its main line stations was under water for four days, and part of its main line was washed out at the Canadian river crossing. The main line station submerged was that known as Indian station on the Arkansas river between Tulsa and Osage junction. This station has a normal capacity of 100,000 barrels a day. Water rose to the height of six feet in the pump house and about 10 feet on the station grounds. No damage was done to the station, but its shutdown naturally interfered greatly with transportation through the pipe lines, and caused considerable backing up of oil into working tanks along the line. The station resumed operations today, and is handling about 75,000 barrels a day at present.

Main Lines Broken

The Prairie's 8-inch and 12-inch main lines were broken at the Canadian river crossing near Pauls Valley, resulting in a loss of several thousand barrels of oil, and considerably crippling the company's facilities for handling oil from North Texas and southern Oklahoma. One 8-inch line did not go out, and is still in service, but the two broken lines have not as yet been repaired.

The Gulf Pipe Line Co. came through the flood with very little damage or inconvenience, other than a failure of communications between stations. It's station on the Boston lease, across the river from Cleveland, Pawnee county, was under water for several days, but is again in operation. It handles about 15,000 barrels a day. The company's main line was not damaged, as far as can be learned, and all river crossings remained in place during the high water.

The Texas Pipe Line Co's. main line was shut down for repairs when the flood came, and, on account of the high water in the various river beds, the company has not as yet been able to ascertain whether its lines washed out or not. It is thought very probable that its Canadian river crossing met a fate similar to that of the Prairie. The Texas Pipe Line Co's. station at the refinery in West Tulsa was nine feet under water during the crest of the flood, but has emerged, and was to be started up again today. Detailed information is lacking as to losses suffered by other pipe line companies, but it is not believed that they were heavy.



West Tulsa plant of Constantin Refining Co. under water during flood last week

Tonkawa Is Cut Off

The Tonkawa field was the hardest hit of any active producing field, as it was not only flooded throughout, but also cut off from the outside world through general demolition of bridges and damage to wires. The Salt Fork, which lies between the field and Ponca City, was out of its banks and spread all over the adjacent territory. This was aggravated in the vicinity of the field by the fact that the Chicaskia river, which was also on a rampage, empties into Salt Fork nearby, and added its swollen waters to the flood already submerging the locality.

It is said that every bridge over which it would be necessary to travel from Ponca City to Tonkawa has gone out, and that it was impossible to get to the field while the flod was at its height. The headquarters of the 101 Ranch, a familiar sight to travelers between Tonkawa and Ponca, was under water, and the Salt Fork bridge near there went out. Water was six feet deep in the headquarters store. The famous "White House" home of the Miller brothers, owners of the ranch, is located on a knoll above the high water mark.

The ranch lost about 3000 head of hogs, it is reported.

Seeley Pool Unaffected

That the operating end of the oil industry in Kansas sustained comparatively small losses due to the high waters and floods of the past few days is becoming assured as reports slowly trickle in from isolated districts. For a time practically all communication with producing fields of the state was impossible either by wire or road, and many operators were fearing a large loss in damaged equipment.

The Seeley pool, in northern Greenwood county, which has become known as the richest pool in the state, escaped practically unscathed. The only serious damage done was a choking up of the pipe lines, and a consequent shut-down forced after operators there had filled all tankage, some of them using fuel oil tanks to hold their surplus production. The pipe line companies expected to have the lines cleared and be taking oil at capacity by the middle of this week.

Several of the fields in Butler County contributed a loss of a total of 69 rigs, and these fields also sustained some serious losses in drilling and pumping equipment, but the loss of the rigs was principally due to high winds and severe electric storms preceeding the water. The Whitewater and Walnut Rivers in this county, and in Cowley County, also were responsible for some of the losses. Wrecked and badly damaged rigs reported to date by companies in the El Dorado field are as follows:

Company	Lease	Number Rigs
Empire Gas & Fuel	Koogler	17
Empire Gas & Fuel	Houston	4
Empire Gas & Fuel	Anderson	3
Empire Gas & Fuel	Batman	2
Empire Gas & Fuel	Tague	1
Empire Gas & Fuel	Nieschelder	1
Empire Gas & Fuel	Hess	3
Empire Gas & Fuel	Bloir	2
Empire Gas & Fuel	Hamilton	2
Empire Gas & Fuel	McClure	1
Ramsey & Haines	Harmon	9
Dickinson et al	Richards	8
Cassoday Oil Co	Watts	3
Union Oil Co	Sargent	4
Foster Oil Co	Harmon	4
(Reported)	Augusta Dist	5
Total		69

It is also believed the Elbing district, in the northwestern part of the county, lost rigs not yet reported. Because of the heavy inundation of the districts near Augusta by the Whitewater and Walnut rivers, reports are not yet complete from those areas.

The scattered pools east and southeast of Winfield have not as yet been heard from. This was in most part due to the high waters in the city of Winfield itself, there being little communication with that city up till the present.

It is known that the Rock district, Cowley County, suffered very slightly, although both pumping and drilling was forced to shut down. Stearns & Streeter, drilling contractors, reported that water reached to the derrick floors only in this field, as far as has been learned.

Aside from the Augusta district, El Dorado and Elbing, little damage is reported for the rest of the Butler County, fields, and the Greenwood County pools appear to have suffered very slightly. Little damage was reported from Marion County, probably located too far north to have been effected by the heavy waters of the rivers further south.

News of more remote fields was still lacking Tuesday night, but no serious losses were reported.

Offers Double Royalty To Government For Oil

WASHINGTON, D. C., June 19.—A. H. Heller of Berkeley, Cal., will be awarded a lease for drilling Naval Reserve No. 2 if he intended, as he said, to offer double government royalty for all wells producing 100 barrels per day or more. Secretary Work has inquired of him whether he meant the bid to be taken literally and if he says "yes" the award will be made to him. Work was not sure that Heller meant what he said, hence the inquiry.

Will Sell Mineral Rights

DENVER, COLO., June 16.—As soon as the Indian council passes the necessary legislation the Department of Interior at Washington will arrange for the sale of oil and mineral rights on the Navajo and other Indian reservations in Arizona and New Mexico. Under supervision of former governor Hagerman of New Mexico who has been appointed commissioner of the Navajo Indians, a council of 12 Indians is being formulated to represent Indians of various tribes on reservations (totaling about 30,000) and have authority to speak for them in leasing of oil and gas on their 12,000 acres of land in the two states named.

Jobbers Hear Sales Talk

COLUMBUS, O., June 16.—Dr. Paul Ivey of the University of Nebraska addressed the Ohio Petroleum Marketers Association here June 12 on "Salesmanship". Dr. Ivey pointed out the follies of price cutting to maintain gallonage and the opinion was expressed after his address that this evil surely will not be indulged in by the jobbers that heard it.

ARDMORE, June 16.—Southern Oklahoma producing areas will be made the subject of an intensive engineering survey by the United States Bureau of Mines, it was announced here today by T. E. Swigart, superintendent of the Bartlesville experiment station. Two engineers will be stationed at this city for approximately a year for the work.

H. C. George, petroleum engineer, will be in charge of the work in Graham, Fox and Hewitt fields. He is to be assisted by R. M. Carr. Mr. Carr will make a peg model of the Graham field as a part of his work. In the Amerada field the engineers are to make a study of operating methods in co-operation with the Amerada Petroleum Corp.

OIL CITY, PA., June 19.—Gasoline prices in western Pennsylvania reacted today to the cut in the price of eastern crude oils yesterday. The market for 58-60 was 13¾ to 14 cents with some obtainable at 13½ cents.

Burbank Shut Down Extended

(Continued from page 23)

as those wells which were not included in the various shut down agreements at Burbank probably will be sufficient to hold the field's production up for some time, not much change can be looked for until all these wells have been completed. However, there is the comforting thought that a great many more wells would have been started by this time, and would have been well on their way toward the sand, had it not been for the shut down.

Although Burbank and Tonkawa are the only fields where any definite work has been done looking toward a shut down, the fact that a shut down is imperative, and is becoming more imperative every day, is fully realized by most producers, and there has been a very noticeable slowing down of work in practically all fields. It is probable that Okmulgee operators will get together during the coming week and formulate some plans for a shut down in their district. Ardmore operators, too, are talking of getting together on a similar proposition, and they have something to worry about in the drilling campaign already under way near the big Hewitt well of the Carter-Southwestern companies. This drilling, by agreement, has already been limited to one well to each 10-acre tract, but even at that, it would not take many more 14,000 barrel wells down there to cause demoralization of the market. Nothing has been heard of a shut down session by Bristow operators.

Association is Active

It is probable that the Mid-Continent Oil & Gas association will not again call a mass meeting of producers and attempt as a body to put over a shut down, but it is the plan of the organization to appoint committees for each district in the state for the purpose of lining up the producers and accomplishing as much of a shut down as possible. By appointing men familiar with their districts, and well known to the operators, it is probable that this method will be more effective than the mass-meeting, resolution-passing plan.

William N. Davis, president of the Mid-Continent Oil & Gas association, has sent out a letter to oil producers, in which he stresses the necessity for a shut down, and comes out straight from the shoulder with denunciation for those who insist on drilling unnecessary wells in the face of an admitted over-production, and with a pro-ration of runs an imminent probability. This letter will have wide circulation throughout the Mid-Continent field, and should do a lot of good.

Takes Barnsdall Agency

WICHITA, KAN., June 16.—The agency for Barnsdall Oils in Parsons, Kansas, has been taken over from W. D. Combs by Charles Steele and William Sharshall, it is announced by A. D. Duran, Kansas City representative of the company.

The new agents have announced they will construct a new filling station on the corner of 26th and Main streets, almost six blocks from the nearest distributing point. They also expect to serve other towns and go after the country trade.

THE EDITORS' VIEWPOINT

It's A Long Way Out Of The Woods

WE CALL attention to the letter of President Davis, of the Mid-Continent Oil & Gas Association, on the necessity for stopping the drill. It requires no explanation. It is prompted by the present, urgent necessities of the situation and there shouldn't be a producer of oil in the United States who would blindly keep on bringing in more production.

The oil industry has already started to slide down the precipice at whose foot lies destruction for many companies. Consider where it may yet go, as indicated by some of the factors every oil man should keep in mind.

Oklahoma has about reached the breaking point. Appalachian crude oils, after a period of several weeks, during which it was hoped the worst was over, yielded in price again on Monday. Smackover production is soaring to new heights. The Powell field promises to reach 100,000 barrels by early fall.

A menace lies in the Wyoming situation. Companies which are storing enormous quanties of oil, will eventually have to unload it and the completion of Sinclair's trunk line eastward will provide the outlet, augmenting the influence refined products from that section are now exerting.

Every day brings announcement of some powerful company's having to raise several million dollars. If these big organizations, with their credit resources, are yielding to the pressure, what is going to happen to you, Mr. Independent producer of a few to a few hundred barrels of oil? And to your brother, the Independent refiner?

Now turn to President Davis' letter and keep in mind while you read it that he is speaking, not only as the official of an association, but as a producer whose interest in this situation is as personal and selfish an anyone's.—L. E. S.

Selling "Gas" Is Merchandising

THE complaint common among oil marketers, large and small, is that they are putting out an increased investment in marketing equipment—not so much, as one man put it, to get new gallonage as to maintain their old gallonage.

This is particularly true of the older established companies. Newcomers to the industry are putting up service stations in the territory covered by the old companies, with the result they are not only getting part of the increased gasoline consumption, but taking business away from the older company's stations.

One big marketer recently said he was forced by competition to put in stations; that he didn't expect to make any real money from their gasoline gallonage but, with the appreciation in real estate values also, he hoped to come out with a reasonable profit. He admitted though that speculating in real estate was not in the province of an oil company.

It has long been the opinion of **National Petroleum News** that the marketing branch of the industry has put too much emphasis on the installation of new marketing equipment to get gallonage, and not enough emphasis on the proper managing or selling of existing equipment to get that gallonage. More equipment must necessarily be put in to take care of the increase in gasoline consumption and to make that gasoline more available to the automobile owner. Observation shows more of a desire on the industry's part to put in this equipment than to put more salesmanship and more advertising out to support existing facilities.

How many companies have considered—before putting in a new filling station at an expense including real estate of $10,000 say— whether or not $500 or $1,000 spent in the present year in more selling effort and advertising of the company's nearest station would not be more profitable?

National Petroleum News has long felt the way the oil industry builds stations at all sorts of points and then leaves the public to find them is inefficient. Once in a while a company will send out a stray circular letter or two announcing the erection of a new station. Once in a while a company will buy a little space in the local newspaper and tell about the new station and where it may be found. Yet if Marshall Field & Co. were to open a branch department store in Evanston, Ill., or one in Minneapolis, just imagine how they would merchandise it. They certainly would not open it and say nothing about it, trusting to the public to ascertain that fact in passing it.

The next big force the oil industry is going to use, and particularly the Independent part of it, is advertising, because advertising can reach the maximum number of people at the minimum cost. Newspaper, billboard and direct mail advertising can be used, not only to bring a service station into life, but to speed it on its way. Where the gallonage of a station falls off, put some advertising behind it—put some sign boards around it—buy some space in the newspapers. If it still falls off, put a salesman or two in that neighborhood selling coupon books and talking up the station and the oil company and its service.

What the Independent oil industry needs now, more than any one thing, is not so much more marketing facilities as more merchandising back of existing facilities, and advertising should be an important part of that merchandising.—W. C. P.

A Good Place To Standardize

STANDARDIZATION again. While we are talking about cutting out some of the frills and duplication in the manufacturing world generally, how about the technical departments of our own oil companies applying this idea to the commerical laboratory tests for oil products.

Take the flash and fire tests for lubricants, for example. Such good authorities as the technical division of the National Petroleum Association and Committee D-2, the oil industry's branch of the American Society for Testing Materials, after considerable study and discussion decided the inch immersion for the thermometer was most practical and recommended it as standard.

That was two to three years ago, perhaps longer. Yet there just comes to hand a letter from a prominent eastern refiner who laments the lack of uiformity in oil company practice in just this one respect. Some use total immersion of the thermometer. some immerse just the bulb, some stick to the inch immersion.

The general tendency in the industry seems to be toward the recommended standard—the inch immersion. One big refining company has taken it up within the past few months. When the way has been as carefully paved for standardization as this particular instance, it's difficult to understand why any oil companies should hang back.—V. B. G.

A week ago it looked like the Oklahoma and Kansas refiners not only needed a Moses to show them the way to the land flowing with milk and honey, but also a Noah to build them an ark.

"Senator Brookhart Seeks Ideas in Russia," says a headline. The senator's mind, like water, tends to seek its own level.

Hewitt's Big Well Puzzles Geologists; Eight New Wells Starting

By A. F. Hinton
STAFF REPRESENTATIVE

TULSA, June 14

MANY interesting possibilities are being discussed relative to the future development of the Hewitt, Carter county field, following the recent completion there by the Carter Oil Co., and Southwestern Petroleum Co., of a large well in a deep and as yet unidentified formation.

Owing to the fact that circumstances connected with the well's coming in have rendered it impossible to determine the age or character of the producing formation, all explanations and predictions as to the occurrence of oil at this depth and as to the extent to which this horizon may be developed, are theoretical, and based only on a study of the log above the depth at which oil was found, together with surrounding subsurface conditions.

The last recorded depth of the Carter well was 2940 feet, in a hard shale formation, and this had been penetrated about two feet when the well came in unexpectedly, flowing at the outset at an estimated rate of 8,000 barrels daily. Thus no opportunity was afforded to obtain satisfactory samples of the producing horizon, and it will probably be impossible to do this until the well has settled sufficiently to allow of further drilling. Efforts to identify the producing formation were made by obtaining settlings from the bottom of the flow tanks, but analyses of the samples thus secured showed them to be hard blue shale similar to that encountered before the well started flowing.

The Hewitt field has three well defined producing sands, and enough wells have been drilled to these horizons to allow geologists to construct reasonably complete and accurate structure maps of them. Deeper sands have been encountered in a number of wells throughout the field, but only seldom resulted in commercial production, and nothing even approaching the Carter well in output was ever found in any of them.

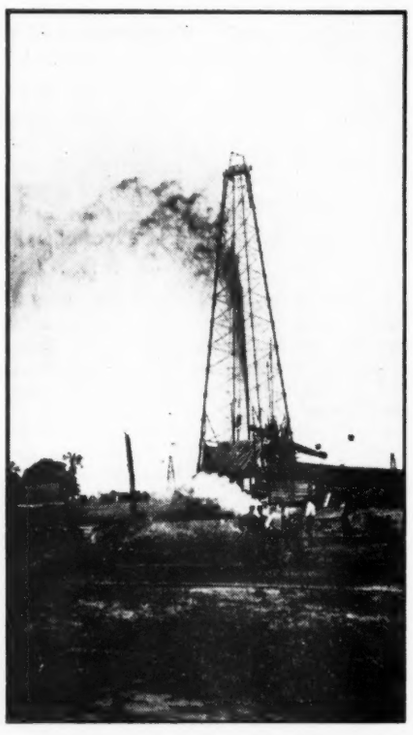
The usual Hewitt sands are found roughly from 1100 to 1300 feet, 1500 to 1700 feet and 1900 to 2100 feet. The first of these is known as the Hewitt sand, the others being known as the second and third sands, respectively. All of these sands are in Pennsylvanian formations. Another producing zone, thought to be in the Simpson formation of Ordovician age, has been found on the Baker-Strawn lease in 22-4S-2W, at a depth of 2863 feet. A number of wells in the field have been drilled into the Ordovician formation, but this is the only well that has found commercial production in it.

Formation is Not Known

The question as to where the production of the Carter well is coming from hinges upon whether it is in a Pennsylvanian or Ordovician formation, and whether it is in a lime or a sand. There is little doubt that the well was in Pennsylvanian formation all the way down to the point where oil was struck, but whether or not at that point it entered the Simpson formation is a question still unanswered. Some geologists are of the opinion that the well is in a lime along a line of contact between the Pennsylvanian series and the Ordovician limestone, but officials of the Carter Oil Co. believe it is producing from sand.

The generally accepted geological belief is that there is a buried range of hills underlying the Hewitt field, these hills being of Ordovician age, and corresponding to the Criner hills which are above the surface to the south of Ardmore, where production has been developed in Township 5S-1E. These hills are more or less precipitous, and enough wells have been drilled to the Ordovician in Hewitt to determine that there is considerable unconformity between that formation and the Pennsylvanian series overlying it. It is believed by some geologists that the Carter well is producing from the flank of one of these buried hills, at a point where it is in contact with Pennsylvanian formations laid down at a later date.

Thus there are two possibilities as to what the result of the Carter well will be with relation to the area under which the new horizon may be encountered. If the well is producing from a sand, which would indicate that it is still in the Pennsylvanian formation, it may extend for considerable distances to the north, west, south and southwest, and may in fact underlie two-thirds of the field's present area. If, on the other hand, the well is in Ordovician lime formation, the probabilities are that there will be only a narrow belt of production following along the contact line already mentioned, and limited by the contour of the particular buried hill from which the oil is coming. To the east and northeast of the field there are several faults which probably would preclude finding of the deep pay at a reasonable depth. There is also the possibility that the Carter well is on a fault not heretofore known, as its formations do not correlate accurately with other wells in the vicinity.



Carter-Southwestern No. 33 Noble, flowing. Hewitt field, Oklahoma.

Largest Ever in Hewitt

Aside from its geological features, and the doubt as to the identity of its producing formation, the Carter well is by far the largest brought in at Hewitt, and is in fact one of the best wells ever drilled in Oklahoma, and is thought to have made a new record for amount of oil produced in a similar period of time. The well came in May 27, and since that time has produced 188,169 barrels of oil, an average of 10,454 barrels per day. For the first four days of its life it increased its production, having had an estimated production of 8000 barrels the first day, and increasing this by the fourth day to 14,460 barels, which was its maximum output. It has since been declining, and is making about 6000 barrels at present, of which about 3½ per cent is water. Gravity of the oil is 34.3 degrees Be., about the average of regular Hewitt crude.

The well is known as No. 33 E. E. Noble, and is located in the southwest corner of the NE¼ NE¼ of 21-4S-2W, on a lease owned half by Carter and half by Southwestern Petroleum Co. It was not drilled with the idea of making a deep test, but was an open location and was drilled in accordance with the regular plan of development of the property, and to offset a Skelly well to the southwest of it. The regular Hewitt sands having shown only small amounts of oil, the well was taken on down, but it is noteworthy that at the time oil was found, it had been practically decided to drill no further, but to plug back to one of the upper sands. The crew was still drilling, but it is said they were momentarily expecting orders to stop, when the well blew in.

Coming in so unexpectedly, and making oil in such enormuos quantities, the well caught the operators unprepared to care for it, and it flowed wild for a short time. The flow started at six p.m. May 27, and was brought under control by noon the next day. When the well started flowing, earthen dikes were hurriedly thrown up, and more than 2000 barrels of oil were impounded and saved during the night. By noon of the next day the well had been brought under control, and made 12,038 barrels.

Fast Work in Controlling

Putting a control head on a well flowing 12,000 barrels through 6⅝-inch casing was a real job, but was successfully accomplished under direction of L. B. Hammers, district superintendent for the Carter Oil Co. The control head was screwed on a joint of pipe and guyed into the derrick so that it remained upright, and was then lowered through the flow of oil to the derrick floor and screwed to the casing by means of ropes. It is believed that not more than 2000 barrels of oil were lost altogether

before the well was brought under control, which is indeed a remarkable record, when the size of the well is taken into consideration.

A 1600-barrel wood tank was used as a flow tank, and was rendered gas tight by building a double roof wtih two layers of matched lumber running in opposite directions. The gas showed about three gallons of gasoline to the 1000 cubic feet, it is reported, and in a few days after the well came in, a line was laid to the company's nearest gasoline plant. This line was connected into the top of the tank and drew the gas directly from it. This connection was not sufficient to handle more than a small part of the total gas, but was sufficient to increase the plant's production about 1000 gallons a day for the first three days. The "smoke stack," or vent, on top of the tank was equipped with steam lines, and steam was thus thoroughly mixed with escaping gas, making a non-inflammable mixture.

Well is Pinched Down

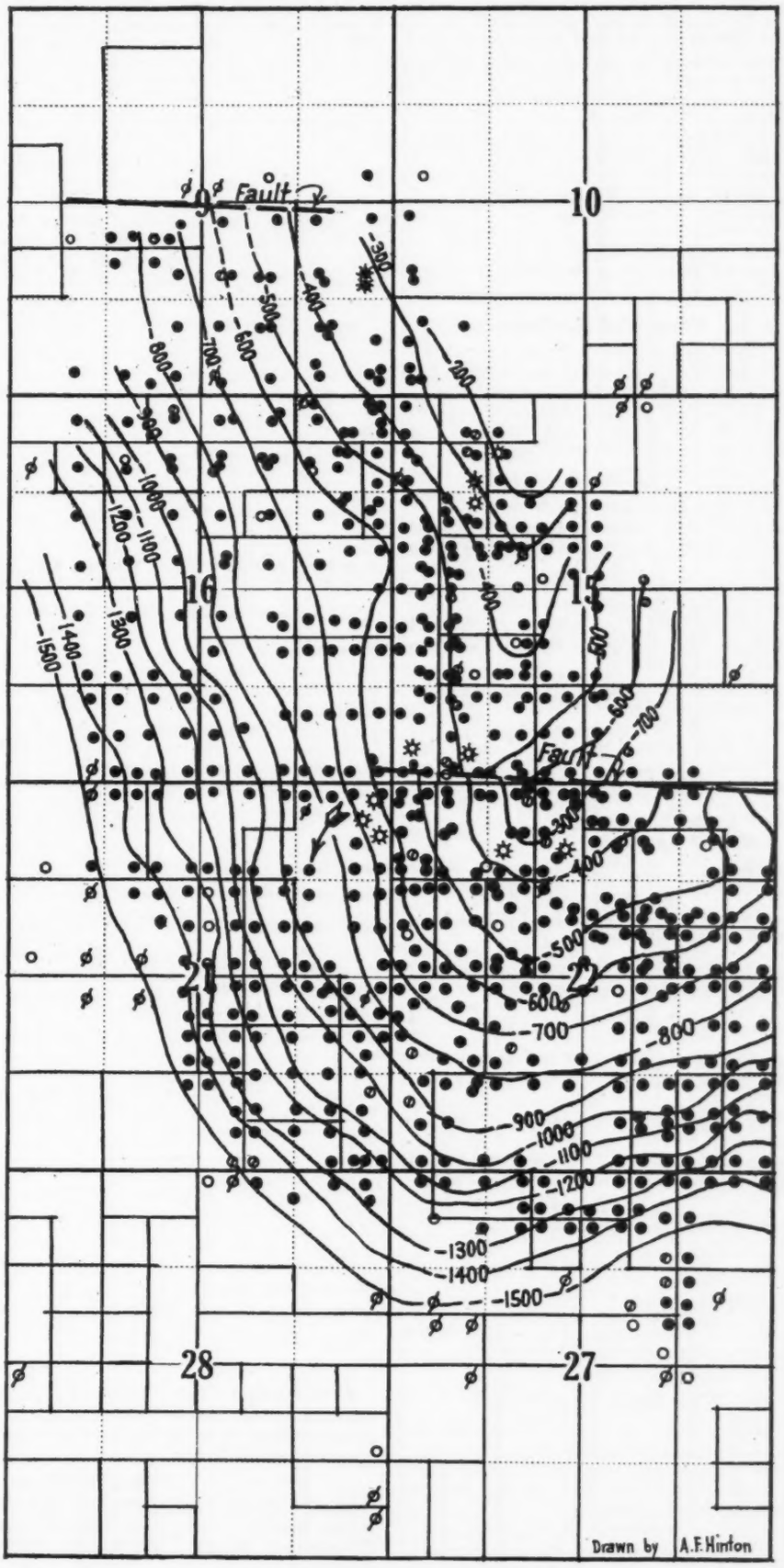
When the well came in, the casing was about one joint off bottom, and had not been set. Considerable salt water was being carried in the hole from a water sand passed through at about 2500 feet, and which had not been cemented. It was the intention of the operators to cement this string of casing as soon as a place to set the casing had been found. It is thought that the great pressure incident to the large flow of oil was sufficient to hold this water off, as the well made absolutely clean oil for 14 days, during which time it produced 166,946 barrels, an average of 11,925 barrels per day. The first water and cut oil made its appearance on June 11, and amounted to probably five or six per cent of the total. The well was immediately pinched down in order to reduce the percentage of cut oil, and has been pinched down a little more every day. At present, it is making 6300 barrels through a five-inch gate closed half way, with about 3½ per cent cut oil. A Tretolite plant sufficient to handle the well's production has been installed and the oil is being successfully treated. It is believed the well would still make between 8000 and 9000 barrels if allowed to flow wide open.

The following table shows the actual oil produced and saved since the well started flowing May 27:

Carter Oil Co.-Southwestern Pet. Co. No. 33 Noble. 21-4S-2W, Hewitt Field, Oklahoma.

Date		Production (Bbls.)
May	27	2,088
	28	12,038
	29	13,910
	30	14,460
	31	13,783
June	1	12,932
	2	12,887
	3	11,752
	4	11,053
	5	11,067
	6	11,071
	7	10,764
	8	10,314
	9	9,705
	10	9,122
	11	(Started showing water) 7,950
	12	6,907
	13	6,366
18 Days Total		**188,169**
Average per day		**10,454**

What to do with the well to get rid of the water is now as much of a problem as that concerning the identity of the producing horizon. The operators of course do not dare take off the control head, and the casing cannot be lowered until this has been done. It is ing would be of much help, as the well has undoubtedly enlarged the hole considerably while drilling itself in. It is probable that nothing will be attempted for the present, as long as the treating system can handle the production. It is to be regretted that the 2500-foot water sand was not cemented off when drilled through, as it is possible that this water may yet ruin the



Structure Map of Hewitt Field, T4S-R2W, Carter County, Okla. Structure Contours Based on First Hewitt Sand Contour Interval 100 feet. Datum Sea Level Contours from U. S. Bureau of Mines Bulletin:—"Petroleum Engineering in the Hewitt Oil Field, Oklahoma." Carter-Southwestern No. 33 Noble indicated by arrow.

also doubtful whether lowering the casbest well on record in Oklahoma.

A study of other deep wells heretofore drilled at Hewitt leads to the conclusion that production in the deep horizon uncovered by the Carter well will not be found at any great distance to the east of it. To the west and southwest, however, no tests have been drilled deep enough to have encountered this formation, the dry holes heretofore considered as limiting the field in that direction having stopped at comparatively shallow depths. The Hewitt sand structure proper dips at the rate of about 1200 feet to the mile to the south and west, and if the Carter well is in a sand lying approximately parallel to other producing sands in the field, a depth of approximately 4000 feet would be necessary to find it west of Sec. 21.

Deep Well Northeast

The deepest test yet drilled in the Hewitt field proper was the Skelly Oil Co.'s No. 8 Stechi, in the NW¼ SW¼ of 15-4S-2W, about a half mile northeast of the Carter well. This well reached a depth of 3881 feet, and was in a black sand topped at 3776 feet. Lost tools prevented further drilling, and the well was plugged back to 2365 feet, where it was completed as a 20-barrel well. Skelly also drilled another deep one in No. 11. Noble, in the NW¼ NW¼ of 22, about a quarter-mile northeast of the Carter well. This well was drilled to 3254 feet, and was plugged back to 2735-2745 feet, with initial production of 50 barrels.

Humble Oil & Refining Co. drilled its No. 8 Dillard, in the NW¼ NE¼ of 22, down to 3236 feet, where it stopped in hard lime topped at 3212 feet. This well had showings of oil in lime from 2655 to 2658 feet, oil and gas in lime from 2658 to 2668 feet, oil in sand from 2668 to 2667 feet, and in sandy lime from 2737 to 2745 feet. Other deep tests in this section include the Baker-Strawn No. 1-A and No. 8-B, on the Dillard, in the NW¼ NW¼. No. 1-A went to 3345 feet, and was in lime from 2700 feet on down, while No. 8-B was drilled to 2905 feet, and was completed for a small well in Ordovician lime (Simpson), topped at 2863 feet. A number of other wells to the northeast of the Carter well were drilled to depths around 3000 feet, but the examples given are typical.

The deepest dry hole to the west and southwest of the Carter well, in the territory heretofore mentioned as holding out the greatest likelihood of extension of the field, was the Humble's No. 6 Walker, in the SW¼ NW¼ of 21, reaching a depth of 2495 feet. The same company's No. 8 on this farm, also a dry hole, was abandoned at 1910 feet, and its No. 7 at 2435 feet. The same company's No. 5 Walker, in the NW¼ NW¼ of 21, was abandoned in salt water at 2400 feet. Other dry holes in this area were considerably shallower than those mentioned.

New Deep Ones Started

Eight wells have started operations, intending to go to the deep pay, since the Carter-Southwestern gusher came in. An agreement was reached by adjoining lease owners not to drill closer than in the center of ten-acre tracts, and all new locations have been made on that basis, with the exception of the Skelly well in the northeast corner of the SW¼ NE¼ of 21, which is a diagonal southwest offset to the big well. This well, which is known as No. 12 Noble, is going down with the rotary, and has already reached a depth of 1300 feet, or nearly 200 feet per day since starting. Skelly Oil Co. is also deepening its No. 10 on this location. This well was formerly completed at total depth of 2390 feet. It is being deepened with cable tools, and a race is on to see if No. 12 can go from the "grass roots" down with the rotary before No. 10 makes the necessary 550 feet with cable tools.

Other wells going after the deep pay include the Southerland Petroleum Co. (Heenan & Coe) No. 7 Ward, in the center of the SW¼ SE¼ SE¼ of 16-4S-2W, drilling at 200 feet; N. L. Amster No. 9 Westheimer-Daube, in the center of the SE¼ SE¼ SE¼ of 16, drilling at 250 feet; Carter-Southwestern No. 39 Eva Noble, center of the NW¼ NE¼ NE¼ of 21, rig; Carter Oil Co. No. 20 A. H. Ward, in the center of the NE¼ NW¼ NE¼ of 21, building rig. The Wolverine Oil Co. (Shell interests) has made location for its No. 111 Dillard, in the NW¼ NW¼ SW¼ of 22, and will drill to the deep pay. Rig has been completed and tools are moving in. This is the first deep test announced to the southeast of the big well.

Oil Men To Hold Field Meet

PHILADELPHIA, June 14.—Plans were set afoot at the annual dinner of the Petroleum Bowling League of Philadelphia at the Rifle Club June 12, to revive the Petroleum Athletic Association of Philadelphia, activities of which were suspended during the year. It has been decided to hold a track and field day early in September. The association has the support of the bowling league.

Trophies were awarded bowling league winners at the dinner. Winners were: Union Petroleum Co. team, champions; Sun Oil Co. team, runners up; Sun Oil Co. team, high team three games; W. J. Robertson, Union Petroleum Co., high individual average; J. Gillespie, Sun Oil Co., high individual three games; C. Furness, The Texas Co., R. Bell, Atlantic Refining Co., and C. H. Fryburg, Sun Oil Co. winners high single games.

Addresses were made by L. V. Stanford, vice-president, Union Petroleum Co.; Richard A. Wotowitch, Henry L. Doherty & Co., New York, and William A. Tracey, Union Petroleum Co., secretary-treasurer of the league.

CHICAGO, June 20.—The first autumn convention of the American Oil Men's Association will be held in Chicago, Congress Hotel, Oct. 2 to 4 inclusive. The announcement was made shortly after the directors meeting here June 15 at which Walter G. Willard was elected secretary to succeed Melville C. Hill who resigned.

LOS ANGELES, June 19.—Daily average production in California for the week ending June 16 showed a slight increase, as follows:

	June 16	June 9
Santa Fe Springs	240,000	235,000
Long Beach	170,000	165,000
Huntington Beach	109,000	108,000
Torrance	5,000	5,020
All Other Fields	212,000	217,930
	736,000	731,000

Send Out Circulars On Coupon Exchange Plan

CHICAGO, June 20.—The first aggressive move of the gallonage coupon exchange, launched by the National Petroleum Marketers Association here three weeks ago, was to circularize the Rotarians assembling for annual convention in St. Louis this week, telling them their coupons were good at Independent stations in that city. All participating jobbers in the Coupon Exchange have been mailed blank forms to use in clearing the coupons redeemed for some other Independent jobber. The blanks were mailed out by Secretary James A. Gilmore, of the N. P. M. A. last Monday.

Fundamentally the plan is to validate all gasoline and oil coupon books sold by an Independent jobber, no matter at what Independent station they may be tendered in payment for oil or gasoline. In this way a tourist may buy gasoline with his home town coupons, all the way from Jacksonville, Fla., to Green Bay, Wis., or over a similar route in other directions. With this campaign will go an educational program through the member jobbers, teaching their trade that gasoline at Independents' pumps is just as uniform and just as usable as that of any large company in the country marketing over a wide area.

Gasoline Stocks Increase

NEW YORK, June 16.—Reports from refineries representing 64.3 per cent of the operating capacity in the United States shows an increase of 19,890,612 gallons in gasoline stocks during May, according to the American Petroleum Institute. Were this ratio of increase maintained at the plants that did not report to the institute, it means that stocks accumulated around 30,000,000 gallons last month. Plants east of the Rockies reported a decline of 4,671,534 gallons but California refineries reported a gain of 24,562,146 gallons.

Kerosene stocks increased 4,796,778 gallons. Gas and fuel oil stocks declined 4,054,764 gallons and lubricating oils 6,093,024 gallons.

Stocks of crude oil held at refineries increased 1,577,452 barrels during the month but stocks of imported crude decreased 745,343 barrels. Reports from representative companies, the institute's bulletin says, showed pipe line and tank farm stocks of crude oil east of the Rockies increased 7,375,000 barrels during the month.

Spann Heads New Company

FORT WORTH, June 14.—W. R. Spann has announced his resignation as president and general manager of the Montrose Oil Refining Co. and as secretary of the Invincible Oil Co. to become president of the National Gasoline Co., a $5,000,000 Delaware corporation. He will continue to maintain offices in Fort Worth.

Mr. Spann has been the directing head of the Montrose company since its organization about five years ago and for the same time has held the secretaryship of the Invincible company. He is well known in the oil industry throughout the country and especially in the Mid-Continent field.

Independent Oil Man Has Done Well, And He Is Marching On

By Warren C. Platt

"The Independent oil man is not a cold, calculating machine. He typifies the American spirit which makes development and progress a great adventure. This is the spirit which has made America great."

This paragraph is taken from the second of the series of advertisements being put out by the advertising organization brought together by President Nicholas of the National Petroleum Marketers Association and known as the Independent Oil Men of America. This campaign is now running in newspapers in 35 states displaying the insignia of Independent oil and each ad is signed by the local oil company that is contributing to the campaign.

But the above paragraph states the essence of the whole Independent oil movement and it states its present position today; and it is also the thought which will guide the Independent oil industry in the future.

The Independent oil man from the drilling of the Drake well in Pennsylvania 60 years ago, has been a typical outdoor American dominated by the thought of development and progress and making of it and his business a great adventure.

Just stop and think what the Independent oil man has accomplished and why. In the past dozen years he has built his business from about 15 per cent of the total volume of oil business in the country—speaking of the marketing and refining end now—to more than 50 per cent and during all that time the Independent oil producer has maintained practically his original position in the finding and the production of crude oil, that of being the dominant factor.

This has been accomplished by hard conscientious work, oftentimes under the greatest of business handicaps, oftentimes with exceedingly inadequate capital, with the most vigorous and even bitter and unfair competition and against the coherent efforts of the Standard Oil companies.

But it has been accomplished and that accomplishment must prove something to the good of the Independent oil industry. As we see it, it can't prove anything else but that the Independent oil man is more efficient in the essentials for success in business than his competitor, and we say this with a full realization of the exceeding great efficiency of the Standard Oil companies and their world-wide organizations.

It has long seemed to us that we have been judging this relative efficiency by the wrong standard. As big organizations the Standard oil companies undoubtedly are the most efficient in the world. Their success proves that, but being the most efficient big companies in the world and being the most efficient companies are two different things. The larger companies grow the more opportunity there is for waste and inefficiency to cause big losses and high expense, and also to our mind, the larger companies grow, the more striking becomes their efficiency if they have it in the public eye.

In order to grow, these companies must have certain outward signs of efficiency, certain mechanical means of bringing about this efficiency, certains systems and methods. Isn't it these outward signs that the public has looked at in the Standard Oil companies and which has prompted the thought that the Standard organizations are more efficient than the competing Independent companies?

Just because the Independent companies are not of such size as to require much of this mechanical equipment and those systems of efficiency which advertise efficiency so well to the public, is it a sign that the Independents are not efficient?

Should any of them grow to that size they will be confronted with the same organization and operating problems as the big companies and will have to adopt the same means, substantially, or better means in order to survive against the thousand and one ways where leaks and inefficiency can creep into a company whose management must be so far distant from the rank and file.

So let's give the Standards credit for being the most efficient **big** companies in the world. Let's take off our hats and say "More power to you," but let's bear in mind that the Independent oil industry could not have grown against the Standard's competition to the size that it has now grown in an inefficient and incompetent fashion.

The very fact of the Independent oil industry's growth and its present existence shows that of the two the Independents have operated more efficiently than the bigger companies.

Possibly there are some things that the bigger companies do at less cost than the smaller Independents. The Independents have not always made the money that the Standards have, by any means, but were all the Standard profits due solely to operating efficiency? Were not some of them, at least, due to the fact that because of their financial ability and the size of their operations they are able to balance good periods against bad periods over a longer time than the Independent can?

Isn't it about time that the Independent oil industry looked itself in the face and realized that it has grown because of its efficiency, because of its ability, because it has put up a good fight and that it is winning more gallonage every day and that given a source of supply it can continue to do that? As to the source of supply, the Independent oil producers of this country have so far never failed the Independent oil industry in providing it with enough crude and the Independent refiner so far has never failed the oil marketer to supply him with the necessary products.

History shows that the Independent oil producer does not go out of business even though some of their number may from time to time sell their properties to the big companies. History further shows that the Independent refiner does not go out of business even though from time to time some refiners shut down or sell out to other companies. History shows that the Independent marketer does not go out of business although some of their number fail and sell out or are consolidated with refiners. The fact remains, looking at the oil industry today and at its history, that every branch of the Independent part of the industry is making progress every year and making that progress in greater proportion to the new gallonage of the country than its big competitors.

There is, if memory is correct, what economists call a law of diminishing returns. Isn't the operation of that law becoming apparent in the oil industry at the present time? Isn't it a fact that the larger a company grows beyond a certain size, the more it must pay for additional business. Heads of a number of the Standard Oil companies testified before the La Follette committee that in the past dozen years they had increased their investment 200 and 300 per cent to do 50 per cent more business and a survey of the balance sheets of the big companies show what an appalling increase in capital they required.

We have for years heard much about the "poor" Independent oil man. Is he really poor? Is he always broke and asking alms of the general public? As a matter of fact, isn't the Independent oil industry rich, probably not so much so in dollars, but even there it's not poor, but isn't it rich in the recognized characteristics of American business, rich in inventiveness, rich in business ability and management, rich in that salesmanship which drives business through every obstacle, rich in that honesty and fair-mindedness that commends all American business and rich in that determination and courage which has made American business a success and which has made the Independent oil industry a big success?

O yes, we have our troubles. We lose a bit of gallonage here and a customer tere and we've got to take a loss on something somewhere else. This world is not paradise yet and probably won't be at least for several years after we have left it, but won't the oil marketer with a single tankwagon today have two tankwagons tomorrow and he with five tankwagons today, won't he have 10 tomorrow? Won't the refiner with two stills today have four tomorrow? Won't the Independent producer with one well today have two tomorrow?

Some one or two of us may drop from the race but won't the Independent oil industry as such continue to grow as it has grown in the past and be a still greater success in all the things that not only count for business but count for one's personal success.

Here is a thought, let's consider it.

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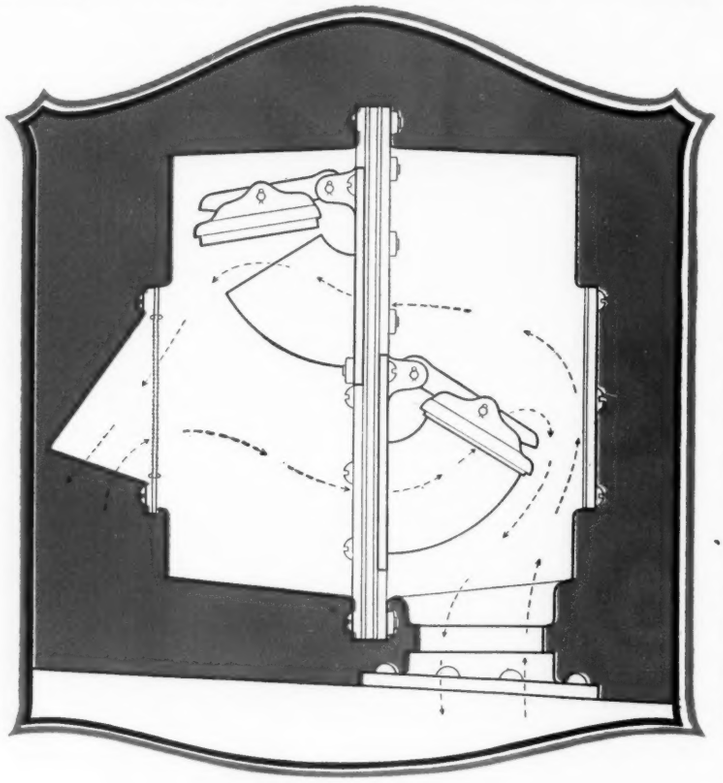
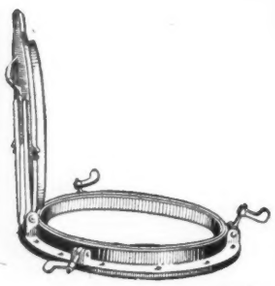
The Loop Thief Hole Cover

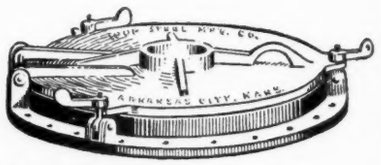
is made of aluminum with a weight underneath the lid, where it belongs. The top rests on an asbestos gasket of special construction, making it gas tight. It is fastened down with quick action lugs.



The Loop Man Hole Cover

Aluminum top construction, weighted underneath, asbestos gasket on which the top rests, slotted hinge for the top, which permits it to rest evenly on the gasket, and convenient hand lugs which fasten it down. The ideal manhole cover.





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How the Valve Operates

The action of the valve is illustrated above. The arrows rising from the tank and passing out through the upper valve, indicate pressure from within being relieved, and the arrows passing in from the outside and through the lower valve into the tank, represent incoming air to relieve a vacuum within the tank. In this way conditions are constantly equalized, and practically all evaporation losses prevented.

Ideal Construction

The valve is constructed of cast aluminum, with lead seats on the valve faces, thus entirely eliminating any danger of spark. The valve seat will not corrode, guaranteeing a correct valve action at all times. The outside opening to the valve chamber is double-screened—no fire can possibly get through it.

Write today for prices, suitable sizes and the details of our service facilities for installation.

The LOOP STEEL MFG. CO., Arkansas City, Kansas

New Cracking Process Expected To Get More Gasoline From Heavy Crude

CLEVELAND, June 13.

WITH the issue on May 22 of letters patent No. 1,456,419 to John C. Black of the Mexican Petroleum Co., a cracking process was disclosed which is expected, according to the few oil industry engineers who are at all familiar with it, to be of exceeding importance in largely increasing the yield of gasoline from the heavy Mexican and California crudes.

These men assert the belief that the Black method is superior to any of the processes at present in use in handling heavy oils with little or no virgin gasoline content.

The process has been operated for some time on a scale producing 500 barrels of gasoline a day at the refinery of the Mexican Petroleum Co. at Destrehan, La., and has demonstrated its merit to the extent that it is understood that the process is to be installed on a large scale in the refinery now under construction by the Doheny interests at Wilmington, Cal.

The plant at Destrehan operated for the most part on heavy Mexican oil, it is understood, although expensive experiments giving satisfactory results were carried on at the plant on California oil shipped in by tanker.

The process as shown by the patent drawings and specifications, partakes somewhat of the nature of the Cross and Ellis processes, although it has at least two important main differences, which are:

Two New Features

1—The process is designed to operate under a pressure of about 70 atmospheres, or 1,050 pounds per square inch. This is the highest pressure it is believed, used in any of the present commercial processes, the Cross using about 600 to 800 pounds and the others mostly from 90 to 120 pounds.

2—Provision is made in the Black process for cleaning the carbon from the system by means of steam and hot water, without drawing the fires and cooling the equipment. This is accomplished by a system of piping and valves by which, when it is necessary to clean the system, the flow of oil through the heating tubes may be stopped and replaced with a flow of water which, in the form of steam, is circulated through the system, throughly removing the carbon deposits.

It is claimed that with the very high pressure employed a gasoline comparable in quality to straight run can be obtained. It is said to be water-white, free from odor and to be more powerful than the straight run goods. Fuel crude, it is said, can be treated in the Black system to produce more than 50 per cent of commercial gasoline, the cost of manufacturing which, figuring the crude on a basis of $1 a barrel, is estimated at 6 cents a gallon. The loss is figured at less than 2 per cent.

Like Cross, Black prevents vaporization of the oil during cracking by maintaining it under high pressure. Black however, vaporizes the oil after it leaves the cracking zone, passing it into a fractionating tower where the heavier vapors are knocked back and the gasoline vapors drain off into a condenser.

John C. Black, inventor of the cracking process herein described, is well known in the refining industry, especially on the Pacific coast. He was connected with the Standard of Indiana and the Standard of California for about 20 years before going with the Doheny interests.

Some of the larger companies operating in California are much interested in the Black process because of the belief that it will give better results from California crude than any other process now operating, at least known to the industry generally. However, whether Mr. Black or the Mexican Petroleum Co. will license the process for use by other companies has not been announced.

So far as known, neither the "Patent Club" nor the owner of any other cracking process has served notice on the owners of the Black patent rights that it infringes any other patent. Some features of the process at least appear to be strictly novel as far as any commercial application of them to the cracking of oil commercially is concerned. —Editor.

In describing the principle upon which the method operates, the patent letter says:

High Pressure Necessary

"To successfully operate the process, it is essential to employ a pressure high enough to prevent vaporization of the hydrocarbons while undergoing decomposition or cracking, and it is also essential to maintain the pressure on the carbon precipitating chamber, for if the hydrocarbons are permitted to vaporize, carbonaceous material is deposited at a rapid rate and would cause fouling of the tubes, carbon precipitating chamber and other elements of the apparatus necessitating shutting down and cleaning out.By operating the process with the hydrocarbons in liquid condition the carbonaceous material produced in cracking is in a condition easily removable, due to its deposition from a liquid suspension, and is not in the form usually found in other processes but is more in the nature of an oily granular deposit easily disintegrated and purged from the apparatus.

That is to say, I maintain pressure from the pump throughout the system to the pressure regulating and discharge valve and by so doing I minimize the carbonaceous deposits and obtain them in an easily removable form.

"I have also found that cracking in the liquid phase produces low boiling point hydrocarbons of superior quality to those processes operating with the "mixed liquid vapor phase" or the "vapor phase" by producing less of the unsaturated hydrocarbons. It also produces products of better odor and color and better boiling points and produces finished gasoline approaching more nearly the quality of natural gasoline produced from crude petroleum than those processes not using high pressure.

"For this reason and for those previously mentioned, I maintain the hydrocarbons under sufficient pressure to prevent their vaporization during the decomposition period and to hold them under such pressure until the decomposition of the hydrocarbons (at the temperature of discharge) has ceased or practilly so before reducing the pressure and discharging them from the high pressure elements of the apparatus.

Pressure 70 Atmospheres

"The pressure I prefer to use is about 70 atmospheres on the pressure side of the pressure regulating valve. This pressure insures maintaining the hydrocarbons usually employed for cracking in a liquid condition, although in some instances I have used a higher pressure and in others a lower pressure, depending on the oil under treatment.

"The ingoing pressure is usually 200 to 300 pounds in excess of the terminal pressure and when this differential increases to any extent over that shown at normal operating condition, it is an indication that the system is becoming fouled and should be purged of the accumulated carbonaceous material.

"The temperature required for the particular hydrocarbons being treated may be determined by the increase in the Be. gravity of a sample after treatment, supplemented usually by a distillation test to determine the yield of hydrocarbons boiling between certain specific temperature limits. In practice I have found that for some grades of oil the best temperature of reaction ranges from 750 to 850 F. while for others usually of higher Be. gravity, the temperature range may be as high as 900 F. and in some cases as high as 1000 F."

The following description of the various elements of the process and apparatus in the patent papers is keyed to the accompanying drawing:

"Figure 1 is a part sectional, part elevational view of the apparatus.

"Figure 2 is a front elevation of the furnace showing the preferred arrangement of the furnace.

"Figure 3 is a pressure temperature curve showing in a diagrammatic way the change in pressure with the increase of temperature of a hydrocarbon oil undergoing a cracking reaction in a vapor tension measuring apparatus.

Irregular Action Detection

"It is an object of my invention to provide means for detecting any irregular action in the cracking coils or other part of the apparatus, the irregular action being usually caused by carbonaceous deposits therein.

"One of the objects is to heat the hydrocarbons to an increasing temperature in their progress through the tubular coils and to furnish the greater portion of the latent heat of reaction in the final coils of my apparatus where I have positive control of the temperature to the end that I may maintain therein a uniform temperature or even a rising temperaure and also to supply heat over a longer period of time at the temperature which I elect to operate at and to permit the hydrocarbons to absorb the latent heat of reaction without diminution of sensible heat, thereby bringing about the maximum cracking effect obtainable at that temperature.

"I have noted that when a hydrocarbon has reached a cerain cracking tem-

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perature and no further heat is supplied beyond the heat ordinarily required to maintain that temperature, that a diminution of temperature takes place due to the abstraction of heat from the body of the hydrocarbons and rendered latent by the endothermic reaction taking place and that the diminution of temperature reduces the rate of reaction and total production of low boiling point hydrocarbons, whereas when the latent heat is supplied from an outside source an increased yield results.

"In the drawing, 1 represents a furnace having there in horizontal partitions 2, 3, 4 and 5, with openings 2', 3', 4' and 5' in the partitions and openings 6 and 6' in the furnace walls, these openings 6 and 6' having covers 7 and 7' that can be readily removed for the purpose of getting at the coils 9, 9' and 10 and 10' in the furnace.

Oil Burners Used

"Heat may be supplied to the furnace by ordinary burner tubes, 6" which may be supplied in the usual manner with oil and steam through suitable tubes having valves 6"' and 6"". By means of these valves the heat supplied to each coil may be regulated as desired.

"The hydrocarbons to be cracked may be pumped by a pump 18 through the tube 31, heat exchanger 22, tube 8' and coil 8 into the series of coils 9 and 9' thence downwardly through a tubular connection 12 to the series of coils 10 and 10'.

"Under some conditions I may wish to pass the oil around the heat exchanger 22. In order to do this I insert a valve 31' in the tube 31 and a valve 8" in tube 8' and connect a branch pipe 29 to the pipes 31 and 8' and insert a valve 29' in this branch pipe. Then by closing valves 31' and 8" and opening valve 29' the oil will pass through the branch pipe 29 directly into pipe 8' without passing through the heat exchanger 22.

"For convenience I insert a pyrometer 14 in the connection between the coils 9 and 10, another pyrometer, 15 between the series of coils 10 and 10' and a third pyrometer 16 at the outlet of the final coil 10'.

"From the coils the pressure developed by the pump 18 forces the hydrocarbons into what I denominate the 'carbon precipitating chamber.'

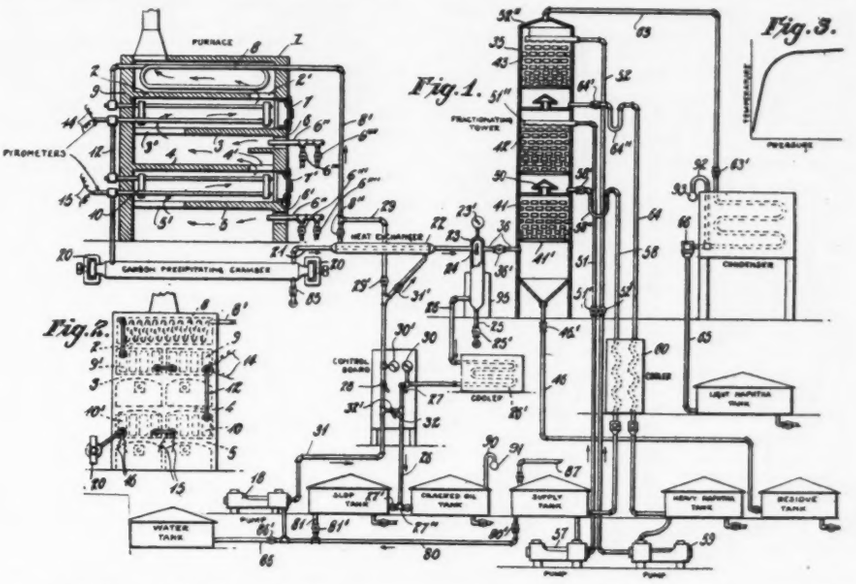
Carbon Precipitating Chamber

"This chamber is of considerably larger cross-sectional area than the cross sectional areas of the tubes and is intended to perform any or all of the following functions, the fundamental function being to reduce the rate of flow of the hydrocarbons after they have passed through the heating coils to facilitate the deposition of carbonaceous material produced in the cracking reaction and to deposit it in such a condition and in such a receptacle as to be easily removable from the apparatus.

"Another function of the carbon precipitating chamber is to allow the hydrocarbons therein while at a high temperature to undergo further disassociation or polymerization if the cracking reaction has not been complete in the heating coil which may be caused by inefficient operation or other causes.

"To facilitate the removal of the carbonaceous material the carbon precipitating chamber may have detachable heads 20 which may be conveniently removed and the chamber purged of carbonaceous deposits when the ordinary methods of purging hereinafter described are not effective.

"To purge the apparatus of carbonaceous material in the ordinary method of purging, the valve 80' in pipe 80 is closed and the valve 86' in pipe 86 is opened, whereby the oil supply to the pump 18 is shut off and a supply of



water substituted for the oil. The pump is continued in operation, displacing the oil in the system with water and when water appears at the purge connection 25 and valve 25' on the trap 23, then the coils and carbon precipitating chamber are sufficiently cleared of oil to permit the water and steam to be discharged from the purge connection through valve 85 on the bottom of the carbon precipitating chamber and the carbonaceous material is discharged with the water and steam. This is continued until the apparatus is cleared of deposits, the valve 86' is then closed and the valve 80' opened and a supply of oil pumped through the apparatus replacing the water with oil, the water is discharged through the purge connection 25 and valve 25' or it may be run to a slop tank through pipe 26 and valve 27'.

Mixture to Slop Tanks

"The water and oil is continued to be pumped into the slop tank until the stream is free from water and the oil has reached such a cracking stage that it may be discharged through valve 27" into the cracked oil tank or it may be discharged through valve 36' into the fractionating tower. The fires are maintained under the heating coils during the purging operation to produce highly heated water or steam which acts as the purging agent.

"There is a connecting tube 21 between the carbon precipitating chamber and the heat exchanger 22, the connection 21 passing through the heat exchanger and into an oil by-pass trap 23, which may comprise a tube or receptacle as shown, having therein a baffle 24, and a gauge 23' to show the pressure of oil in the trap 23, the trap 23 is preferably placed in a cooling tank 95.

"The hydrocarbons when projected against the baffle 24 must pass around the same and the baffle will therefore act as a deflector to facilitate the precipitation of suspended matters not previously precipitated and such matter may be purged from the system through a tube 25 and valve 25'.

"Leading from the trap 23 is a connection 26 connected to the trap a considerable distance from the bottom thereof and this connection leads through a cooler 26' to what I denominate a 'control board' which constitutes a convenient means for supporting in proximity to each other the control valves 27 and 28 and gauges 30 and 30'.

"The connection 26 and valve 27' leads into what I denominate a 'slop tank' for receiving uncracked oil and, or, water.

To Divert Oil

"Under certain operating conditions I may wish to switch the oil supply going to the coils into the 'slop tank.' In order to do this I insert a connecting pipe 32 having a valve 32' therein between pipes 31 and 26. Then by opening valve 32' the oil may be passed from pump 18 or discharged back from pipe 8' through pipes 31, 32, and 26 and valve 27' to the 'slop tank.'

"By arranging the valves 27 and 28 and gauges 30 and 30' on the 'control board,' an attendant may conveniently inspect these gauges and determine the condition of the apparatus and decide whether it would be desirable to increase or decrease the pressure in the system by regulation of the valve 27 or valve 36' as the case may be, or if he observes that there is an abnormal differential between the gauges 30 and 30' he knows that the coils or carbon catcher or both are becoming fouled with carbonaceous material and should be purged.

"The trap 23 is connected with a tower which is denominated on the drawing a fractionating tower by a tube 36 having a pressure regulating and discharge valve 36' therein, which permits the hydrocarbons to be delivered to the fractionating tower.

"The by-pass trap 23 has several functions as follows: When discharging into the fractionating tower through line 36 and pressure-reducing and discharge valve 36', trap 23 acts as a catcher for suspended particles of carbon and as

a pressure transmitting device in conjunction with the line 26, and cooler 26′ leading to the gauge 30 on the control board, valve 27 being closed when so operating.

Inspection Made Easy

"This by-pass and connections as shown, gives the attendant an easy means of inspection and comparison of the inlet and outlet gauges 30′ and 30. Or if, for any reason, it is not desired to discharge the hydrocarbons, or during purging, the water or steam into the fractionating tower, then valve 36′ is closed and the main stream of hydrocarbons or water when purging, is bypassed through line 26 through the cooler 26′ and discharged through the pressure regulating and discharge valve 27 into the slop tank or the cracked oil tank as may be desired. In this manner two methods of operation may be employed each independent of the other or it may be found desirable to fractionate a portion of the hydrocarbons and cool and store the balance; this may be readily carried out by the apparatus as described. The fractionating tower comprises a series of compartments 41, 42 and 43. The compartment 41 has a conical bottom for collecting the deposited residues and passing them through a tube 46 having a valve 46′ therein, to what I call a residue tank.

"The compartment 41 has arranged in it just above the point where the tube 36 enters the compartment 41, a tile structure 41′ made up of staggered tiles to baffle the upward passage of the hydrocarbon vapors through the tile structure and to catch the particles of oil entrained in the vapors to allow them to drop back onto the conical floor at the bottom of the compartment 41. The vapors pass on up through the compartment 41 and through a hooded opening 50 and thence through a tile structure similar to the tile structure 41′ immediately above the hooded opening.

"This tile structure in turn acts as a washing means for the vapors that have passed through the hooded opening 50 and have been partially condensed and absorbed on the tile surfaces due to the wetted surfaces of the tiles and to the temperature maintained in the section 42 by the injection therein of oil through a sprinkler head 51″ connected with a pump 57 by a tube 51 having a valve 51′ therein. A tube 58 having a valve 58′ and a trap 58″ therein opening into the compartment 42 near its bottom conducts the condensate in 42 together with the wash oil to the supply tank.

Lower Temperature Compartment

"In the fractionating tower above the compartment 42 may be arranged a compartment 43 having a tile structure similar in its construction and functions to that of compartment 42 but maintained at a lower temperature in order to condense out the lower boiling hydrocarbon fractions, the sprinkler head 52″ in this compartment 43 being connected to a pump 59 by a tube 52 having therein a valve 52′ and the pump 59 in turn being connected to a tank which may be conveniently denominated a heavy naptha tank.

"Connected to the lower portion of compartment 43 is a line 64 having a valve 64′ and trap 64″ and connected to the heavy naptha tank.

"Of course there may be other similar compartments in this 'fractionating tower' if additional cuts or fractions are desired.

"Connected to the top of the fractionating tower is a pipe 63 containing therein a valve 63′ leading through a condenser and thence through a look box 66 and tube 65 to what may be conveniently denominated a light naptha tank. This pipe 63 takes from the upper part of the fractionating tower the uncondensed hydrocarbons not separated out in the lower compartments. The valves 46′, 58′, 63′ and 64′ are provided to permit the tower to operate under pressure if desired. The condensate from the vapors issuing from the upper compartment 43 are usually denominated light naptha, the mixed condensate and wash oil from the lower part of the compartment 43 heavy naptha and from the compartment 42 is taken a grade of hydrocarbon made up of condensate and wash oil the latter being taken from the supply tank and which is returned to the supply tank together with the condensate and from the supply tank it is passed through the furnace coils to be treated.

Cool Condensate

"A cooler 60 may surround the pipes 58 and 64 leading from near the bottom of the compartments 42 and 43 for cooling the condensate and the wash oils from the injection heads 52″ and 51″ before discharging them respectively into the heavy naptha tank and the supply tank.

"I provide a pipe 80 having a valve 80′ said pipe extending from the supply tank to the pump 18 with a branch pipe 81 having a valve 81′ therein connecting it to the slop tank and another branch pipe 86 having a valve 86′ to a water supply tank.

"The oil 'supply tank' takes its supply from the compartment 42 through pipe 58 and from an outside source of supply (not shown) through a pipe 87.

"A cracked oil tank is provided connected with pipe 26 and valve 27′.

"The operation of my apparatus is apparent from the foregoing, but to briefly summarize it, the oil to be cracked is pumped by pump 18 from the supply tank through pipe 80, thence through pipe 31 and heat exchanger 22 or through by-pass 29 to pipe 8′ to the coil 8 thence through the series of coils 9 and 9′ and 10 and 10′ in the furnace, thence to the carbon precipitating chamber, thence through the heat exchanger to the by-pass trap 23, from the trap 23 there are two flow lines, one through pipe 36 and pressure regulating valve 36′ to the fractionating tower, and one through pipe 26, cooler 26′ and to the control board and valve 27, and discharging to the cracked oil tank through line 26 and valve 27″, or into the slop tank through valve 27′.

Only Gasoline Vaporized

"It is to be understood that the capacity of the heat exchanger 22 may be such as to cool the hydrocarbons to a degree sufficient to permit only the low boiling fractions to vaporize in the fractionating tower upon release or partial release of pressure by the pressure regulating valve 36′.

"It is also understood that the capacity of the cooler 26′ is such as to cool the hydrocarbons discharging to the slop tank or to the cracked oil tank to a degree to prevent vaporization of the lower boiling point hydrocarbons desired when the pressure is released and they are discharged into said tanks. In this connection it must be understood that there are gases present due to the decomposition of the hydrocarbons that are not condensed at atmospheric temperatures and pressure and are generally known as permanent gases.

"In Fig. 1 of the drawings 90 and 91 show the permanent gas vents connected to the cracked oil tank and 92 and 93 the gas vents connected to the vapor condenser connected to the fractionating tower.

"The permanent gases discharged into the vents are preferably conducted to gas absorbers (not shown) to absorb out any low boiling hydrocarbons that might be entrained in the gas, and the residual gases are then used as fuel under the furnaces or elsewhere if so desired.

Temperature Pressure Curve

"By referring to Fig. 3 it will be observed that as heat is applied to the hydrocarbons that there is a rapid rise of temperature with only a small rise in pressure as shown by the almost vertical line of the curve and that when the temperature reaches the cracking point, the vapor tension or pressure rapidly increases with a relatively small increase of temperature although heat is continued to be applied at the same rate, thus indicating that the heat being applied to the oil is rendered latent by the endothermic reaction of cracking.

"In my new process I so construct my apparatus that I take advantage of the phenomenon above described wherein I am enabled to furnish the latent heat of the endothermic reaction at a time when the reaction is most active and the absorption of heat is at a maximum. Furthermore, I am enabled to maintain the temperature or even to increase the temperature if I so desire during the maximum cracking period, thereby obtaining the increased yield of low boiling point hydrocarbons, which is an important feature of my invention.

Coils Heated Separately

"It will be observed from an inspection of the drawings that I have provided separate coils and separate means 6″ for supplying heat to each of the coils 9, 9′, 10 and 10′ and have provided suitable pyrometers for observation by the attendant whereby he may be governed in controlling and regulating the heat supplied to the coils.

"By this arrangement of coils and heat control means the temperature of the hydrocarbons may be so regulated as to bring coil 10 to the maximum temperature to be employed for the particular hydrocarbons under treatment, then supplying sufficient heat to coil 10′ to maintain the maximum temperature of operation and to supply the heat required in the endothermic reaction and by this arrangement and mode of operation, I have found that I obtain an increased yield of low boiling point hydrocarbons.

"In the operation of my process I keep the hydrocarbons under sufficient pressure to maintain them in the liquid phase during cracking, carbon precipitation and to the point of discharge for subsequent treatment.

"The hydrocarbons are passed to the carbon precipitating chamber, wherein their rate of flow is reduced to permit of the separation of the carbonaceous material produced in the cracking reaction, which will be deposited from a

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liquid suspension and will be in a condition easily removed and also if the reaction is incomplete in the coils, the reaction will continue in a minor degree in the carbon precipitating chamber."

Claims

1. In an apparatus for converting high boiling point hydrocarbons into low boiling point hydrocarbons, a hydrocarbon source of supply, a furnace having a plurality of compartments, a plurality of series of coils in the upper part of the furnace, one series in each compartment, a plurality of series of coils in the lower part of the furnace one series in each compartment, a connection between the series in the upper part of the furnace, a connection from one of the series in the upper compartment of the furnace to a series in the lower compartments, a connection between the series in the lower part of the furnaces, means for applying heat to each series of coils, means for regulating the supply of heat as desired for each coil, a heat indicator between the upper series and the lower series of coils, a heat indicator between the plurality of series in the lower part of the furnace and a heat indicator on the outlet of the series of coils whereby regulated amounts of heat may be supplied as desired.

2. In an apparatus for converting high boiling point hydrocarbons into low boiling point hydrocarbons, a hydrocarbon source of supply, a furnace having a plurality of compartments, a plurality of series of coils in the upper compartments of the furnace, one series in each compartment, a plurality of series of coils in the lower compartments of the furnace one series in each compartment, a connection between the series in the upper part of the furnace, a connection from one of the series in the upper part of the furnace to a series in the lower part, a connection between the series in the lower part of the furnace, means for supplying heat to each series of coils, means for regulating the supply of heat as desired for each coil, a heat indicator between the upper series and the lower series of coils, a heat indicator between the plurality of series in the lower part of the furnace, a heat indicator on the outlet of the series of coils whereby regulated amounts of heat may be supplied as desired, and a carbon precipitating chamber outside the furnace with a conduit between the final series of coils and the carbon precipitating chamber.

3. In an apparatus for converting high boiling point hydrocarbons into low boiling point hydrocarbons, a hydrocarbon source of supply, a furnace having a plurality of compartments, a plurality of series coils in the upper compartments of the furnace, one series in each compartment, a plurality of series of coils in the lower compartments of the furnace one series in each compartment, a connection between the series in the upper part of the furna a connection from one of the series in the upper part of the furnace to a series in the lower part, a connection betw the series in the lower part of the furnace, means for supplying heat to each series of coils, means for regulating the supply of heat as desired for each coil a heat indicator between the upper series and the lower series of coils, a heat indicator between the plurality of series in the lower part of the furnace, a heat indicator on the outlet of the series of coils whereby regulated amounts of heat may be supplied as desired, and a carbon precipitating chamber outside the furnace with a conduit between the final series of coils and the carbon precipitating chamber, said carbon precipitating chamber having detachable heads and an outlet for the hydrocarbons.

4. In an apparatus for converting high boiling point hydrocarbons to low boiling point hydrocarbons comprising a source of supply, a pipe line connected thereto, a valve in the pipe line, a gauge also in the pipe line, a furnace, coils in the furnace connected to the pipe line for heating the hydrocarbons, a carbon precipitating chamber connected to the coils, a pipe line outlet for the carbon precipitating chamber, and an oil by-pass trap in said outlet pipe line, said by-pass trap being connected at its upper end to an outlet pipe line having therein a discharge valve for the heated hydrocarbon, the lower part of the trap having an outlet pipe line leading therefrom to a discharge tank, the pipe line leading from the supply tank to the coils and the pipe line leading from the by-pass trap to the discharge tank being arranged in proximity to each other at one point, and gauges connected with the pipe lines near this point whereby an attendant by observation of the gauges may oerate said valves to regulate the pressure in the coils and the carbon precipitating chamber.

5. In an apparatus for converting high boiling point hydrocarbons to low boiling point hydrocarbons comprising a source of supply, a pump and connections thereto, heating coils and a connection between the pump and heating coils, a pressure gauge and valve in said connections, an outlet for the coils, an oil by-pass trap connected to said outlet, a blow-off discharge at the lower end thereof, an upper connection to a pressure reducing and discharge valve, a lower connection to a discharge pipe line, a pressure gauge and valve therein in proximity to the first mentioned pressure gauge and valve whereby an attendant may, by observation of the gauges so regulate the valves as to maintain the desired pressure in the coils, trap and connections as described.

6. In an apparatus for treating hydrocarbons comprising a source of supply, a control board, a furnace having a series of coils therein, a connection between the source of supply and the coils, a gauge and valve in said connections attached to said control board, an outlet for the coils, an oil by-pass trap in the outlet, and connections from the trap to a discharge, said connections leading from a point above the bottom of the trap and having therein a gauge and valve attached to the control board for the purpose described.

7. In an apparatus for treating oil, the combination of a furnace including coils, means for supplying hydrocarbons to the coils under pressure, an outlet from the coils, an oil by-pass trap in said outlet, an outlet conduit connected to the upper portion of the trap having therein a pressure reducing valve whereby the hydrocarbons may be passed through the upper part of the trap, an outlet conduit intermediate the upper and lower portions of said trap, a cooling means for the trap, and a purging outlet from the bottom of the trap, as described.

8. In an apparatus for treating oils, the combination of a source of supply, heating coils, a carbon precipitating chamber and an oil by-pass trap, connections between the coils and carbon precipitating chamber and trap, a fractionating tower, connections between the trap and said fractionating tower, a reducing valve in said connections and means for spraying oil into the tower to meet the oil vapors after they have been discharged into the tower from the reducing valve.

9. In an apparatus for treating oils, the combination of a source of supply, a heating coil, a carbon precipitating chamber connected to the heating coil, an oil by-pass trap connected to the carbon precipitating chamber, a reducing valve connected to the trap and a fractionating tower with connections between the reducing valve and the tower and means to supply washing oil in the tower to meet the oil vapors as they ascend in the tower.

10. In an apparatus for cracking and fractionating oil comprising a means including a furnace and coils for heating the oil and delivering it under pressure to a reducing valve, a fractionating tower and connections from the reducing valve to the tower, said tower being divided into compartments, and means to supply scrubbing oil in each compartment from a supply without passing through said coils, openings between the compartments to allow the vapors delivered in the tower from said coils to rise and meet the scrubbing oil, and connections for leading away from each compartment the condensed vapors and scrubbing oil to separate storage tanks.

11. In an apparatus for converting high boiling hydrocarbons to low boiling hydrocarbons, the combination of a furnace having coils therein and a carbon precipitating chamber in series relation with the coils with connections between the coils and chamber, separate valved oil and water outlets from said chamber, an oil supply and a water supply with connections from each supply to the coils and valves in said connections whereby said sources of supply may furnish oil to said coils and carbon precipitating chamber and when desirable alternate to a supply of water to purge the coils and carbon precipitating chamber of accumulated carbonaceous material, the oil being discharged through a separate discharge from the water discharge.

12. In an apparatus for treating oils, the combination of water and oil supplies, a pump having valved connections to each source of supply, heating coils and a carbon precipitating chamber, and connections between them and between the pump and coils, said chamber having a main discharge and a blow-off discharge, said first mentioned connections having suitable valves whereby the pump may be shifted from oil to water and the oil or water forced through the coils and main discharge of the carbon precipitating chamber and water, steam and carbonaceous material discharged therefrom through the blow-off discharge.

13. In an apparatus for treating oil, a source of supply, heating coils and connections between the supply and coils, an oil by-pass trap, a discharge tank and discharge connections from the coils to the trap and from the trap to the tank, said supply connections and discharge connections having a by-pass between them with a valve therein whereby the supply of oil may be switched from the supply to the discharge connections without passing through the coils or trap.

14. In an apparatus for treating hydrocarbons, the combination of heating coils and a trap with connections between the same, said trap having its lower part water-cooled, an outlet therefrom for the discharge of precipitants, and an upper and intermediate outlet for the discharge of hydrocarbon.

15. A process which consists in cracking hydrocarbons under pressure and passing them while still under pressure to fractionating tower, reducing the pressure and fractionating under this reduced pressure, the vapors of the hydrocarbons containing various oil fractions of different specific gravity and different boiling points by subjecting the vapors to a washing, cooling and condensing action of a liquid hydrocarbon oil, separating the wash oil together with the admixed condensate from the vapor, then cooling the mixture of oils and returning a portion to the washing compartment to again act as a washing, cooling and condensing medium to separate the fractions of the vapor similar in their specific gravity and boiling points to the first said condensate whereby the wash oil maintains substantially a uniform quality, then passing the remaining uncondensed vapors to an additional washing, cooling and condensing compartment wherein the vapors are subjected to a washing and condensing action with a wash oil of lower specific gravity and lower boiling point to separate hydrocarbons from the vapors in a manner similar to that followed in the first washing compartment and separating from said vapors a condensate of lower specific gravity and lower boiling points than the separated condensate in the first described compartment, then passing the residual uncondensed vapors to a condenser wherein the condensable vapors are liquefied, in this manner obtaining a plurality of condensates of uniform and predetermined quality.

16. The process of cracking hydrocarbons which consists in passing them through heating coils, arranged in series relation relative to each other, gradually heating the hydrocarbons by successive heating means to the maximum temperature selected for that particular oil and regulating the heating means so that said maximum temperature would be attained as the hydrocarbons enter the final coils then passing the oils through the final coils, and while so passing them maintaining substantially the said maximum temperature by supplying the hydrocarbons with sufficient heat from the final heating means to at least equal the heat that is absorbed by the hydrocarbons in the endothermic reaction of cracking and maintaining sufficient pressure upon the hydrocarbons to prevent the vaporization thereof, then reducing the pressure and vaporizing the lower boiling hydrocarbons, fractionally condensing them and returning the suitable fractions to be again subjected to treatment.

17. A process of cracking hydrocarbons which comprises forcing them through preliminary heating coils arranged in series relation relative to each other, where the hydrocarbons are heated to substantially the maximum temperature to be employed in the

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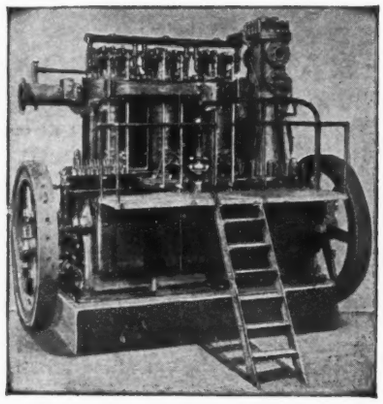

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cracking operation, then passing them through a final heating coil wherein the temperature is maintained at the said maximum temperature and heat is supplied to the hydrocarbons to at least equal that rendered latent by the endothermic reaction of cracking, thereby subjecting the hydrocarbon to a prolonged period of heating at said maximum temperature whereby substantially maximum conversion is obtained for the temperature employed and time of reaction, then passing the hydorcarbons to a carbon precipitating chamber wherein the rate of flow of the hydrocarbons is reduced to permit of the separation of the carbonaceous material of reaction while the hydrocarbons are maintained under sufficient pressure to maintain them in a liquid state whereby the carbonaceous material is deposited in a condition easily removed, then discharging them through a pressure regulating valve into a fractionating apparatus to separate the hydrocarbons of different boiling points.

18. A process for cracking hydrocarbons which comprises forcing them through preliminary heating coils where the hydrocarbons are heated to substantially the maximum temperature to be employed in the cracking operation, then passing them through a final heating coil wherein the heat is supplied to the hydrocarbons that is rendered latent by the endothermic reaction of cracking and sufficient heat is suplied to maintain the hydrocarbons at substantially the said maximum temerature throughout the entire coil, thereby subjecting the hydrocarbons to a prolonged period of heating at said maximum temperature, whereby substantially maximum conversion is obtained for the temperature employed and time of reaction, then passing the hydrocarbons to a carbon precipitating chamber wherein the rate of flow of the hydrocarbons is reduced to permit of the separation of the carbonaceous material of reaction while the hydrocarbons are kept under sufficient pressure to maintain them in a liquid state whereby the carbonaceous material is deposited in a condition easily removed, then passing them through a cooler to reduce their temperature to such a degree as to permit only the lower boiling point hydrocarbons to vaporize upon the release of the pressure, then condensing the vaporized fractions.

19. A process of cracking hydrocarbons which comprises forcing them through preliminary heating coils where the hydrocarbons are heated to substantially the maximum temperature to be employed in the cracking operation, then passing them through a final heating coil wherein the heat is supplied to the hydrocarbons that is rendered latent by the endothermic reaction of cracking and sufficient heat is supplied to maintain the hydrocarbons at substantially the said maximum temperature throughout the entire coil, thereby subjecting the hydrocarbons to a prolonged period of heating at said maximum temperature, whereby substantially maximum conversion is obtained for the temperature employed and time of reaction, then passing the hydrocarbons to a carbon precipitating chamber wherein the rate of flow of the hydrocarbons is reduced to permit of the separation of the carbonaceous material of reaction while the hydrocarbons are kept under sufficient pressure to maintain them in a liquid state whereby the carbonaceous material is deposited in a condition easily removed, then partially reducing the pressure to permit the lower boiling point hydrocarbons to vaporize, then fractionally condensing them to separate the hydrocarbons of different boiling points.

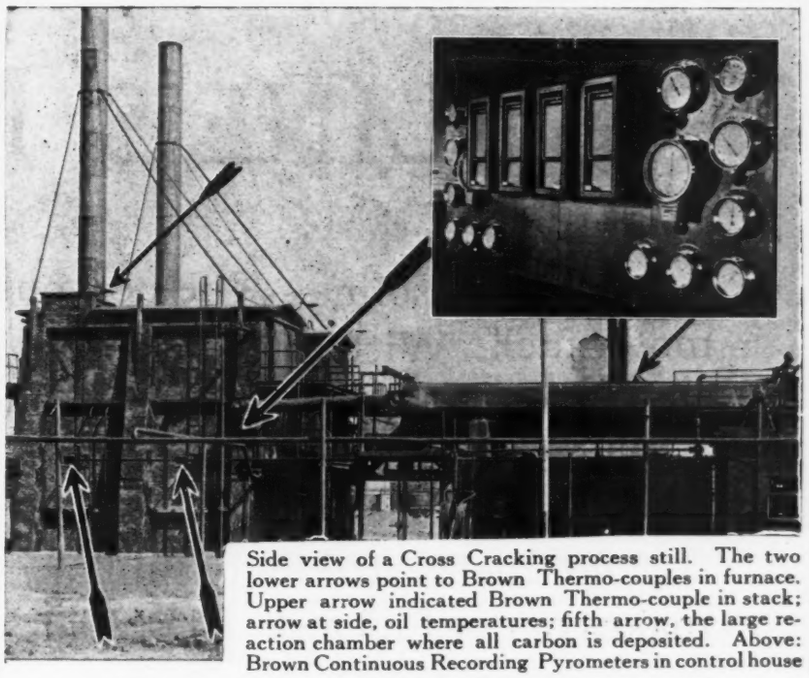
20. A process of cracking hydrocarbons which comprises forcing them through preliminary heating coils where the hydrocarbons are heated to substantially the maximum temperature to be employed in the cracking operation, then passing them through a final heating coil wherein the heat is supplied to the hydrocarbons that is rendered latent by the endothermic reaction of cracking and sufficient heat is supplied to maintain the hydrocarbons at substantially the said maximum temperature throughout the entire coil, thereby subjecting the hydrocarbons to a prolonged period of heating at said maximum temperature, whereby substantially maximum conversion is obtained for the temperature employed and time of reaction, then passing the hydrocarbons to a carbon precipitating chamber wherein the rate of flow of the hydrocarbons is reduced to permit of the separation

of the carbonaceous material of reaction while the hydrocarbons are kept under sufficient pressure to maintain them in a liquid state whereby the carbonaceous material is deposited in a condition easily removed, then while they are under sufficient pressure to maintain them in a liquid condition cool them to such a degree that the low boiling hydrocarbons desired are not vaporized when the pressure is reduced to substantially that of the atmosphere and discharged from the apparatus.

21. The process of cracking hydrocarbons which consists in passing them through heating coils arranged in series relation relative to each other, gradually heating the hydrocarbons to the maximum temperature selected for that particular oil and regulating the heating so that said maximum temperature would be attained as the hydrocarbons enter the final coils, then passing the oil through the final coils and while so passing it, maintaining substantially the said maximum temperature by supplying the hydrocarbons with sufficient heat to at least equal the heat that is absorbed by the hydrocarbons in the endothermic reaction of cracking and maintaining sufficient pressure upon the hydrocarbons to prevent the vaporization thereof, then reducing the pressure and discharging them into fractionating tower wherein the lower boiling point hydrocarbons are vaporized and where the vapors containing hydrocarbons of various boiling points may be fractionated by treating the vapors with a washing, cooling and condensing hydrocarbon wash oil, separating from the vapors a fraction similar in physical properties to the wash oil, then subjecting the remaining vapors to a subsequent similar treatment whereby a fraction may be separated corresponding in physical characteristics to the wash oil employed, and then condensing the residual vapors, thereby obtaining a plurality of fractions that may be separately recovered.

22. A process of cracking hydrocarbons which comprises forcing them through preliminary heating coils where the hydrocarbons are heated to substantially the maximum temperature to be employed in the cracking operation, then passing them through a final heating coil wherein the heat is supplied to the hydrocarbons that is rendered latent by the endothermic reaction of cracking and sufficient heat is supplied to maintain the hydrocarbons at substantially the said maximum temperature throughout the entire coil, thereby subjecting the hydrocarbons to a prolonged period of heating at said maximum temperature, whereby substantially maximium conversion is obtained for the temperature employed and time of reaction, then passing the hydrocarbons to a carbon precipitating chamber wherein the rate of flow of the hydrocarbons is reduced to permit of the separation of the carbonaceous material of reaction while the hydrocarbons are kept under sufficient pressure to maintain them in a liquid state whereby the carbonaceous material is deposited in a condition easily removed, then reducing the pressure and discharging them into a fractionating tower wherein the lower boiling point hydrocarbons are vaporized and where the vapors containing hydrocarbons of various boiling points may be fractionated by treating the vapors with a washing, cooling and condensing hydrocarbon wash oil, separating from the vapors a fraction similar in physical properties to the wash oil, then subjecting the remaining vapors to a subsequent similar treatment whereby a fraction may be separated corresponding in physical characteristics to the wash oil employed, and then condensing the residual vapors, thereby obtaining a plurality of fractions that may be separately recovered.

23. A process of cracking hydrocarbons comprising heating them in continuous tubular heating coils to a temperature sufficient to crack them, heating the coils progressively to the maximum temperature to be employed, then continuing the hydrocarbons in the coil and heating the same to supply heat sufficient for the endothermic heat of reaction without diminution of temperature of the hydrocarbons, then discharging them into a carbon precipitating chamber of larger cross sectional area than the cross sectional area of the coil wherein the rate of flow of the liquid hydrocarbons is retarded, permitting the precipitation of the carbonaceous material from a liquid suspension and prolonging the time of reaction, whereby further decomposition, diges-



Side view of a Cross Cracking process still. The two lower arrows point to Brown Thermo-couples in furnace. Upper arrow indicated Brown Thermo-couple in stack; arrow at side, oil temperatures; fifth arrow, the large reaction chamber where all carbon is deposited. Above: Brown Continuous Recording Pyrometers in control house

The logical temperature-recorder for any oil-cracking process

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Natural Gasoline--- The nervous system of a good motor fuel! Without our nervous system we would be mechanical men---no feelings---without sensitiveness---walking corpses!

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You can keep your motor free from nervous ailments by confining your purchases to Bell Natural Gasoline. Any gravity---low vapor tension---high recovery---uniformity.

Also Bell Straight Run Gasolines---56 to 68---each perfect and guaranteed to be the equal or superior of any similar grade sold in the U. S.

Refineries, Grandfield Oklahoma and Hutchinson Kansas
Plants, Oklahoma, Arkansas, Texas, Louisiana

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OIL & GAS COMPANY - TULSA OKLA.

tion and polymerization of the hydrocarbons will result, and maintaining the hydrocarbons in the heating coils, and carbon precipitating chamber under sufficient pressure to maintain them in substantially a liquid condition and maintaining said pressure to the point of pressure reduction and discharge.

24. The continuous process of cracking hydrocarbons and periodically removing carbonaceous deposits which consists in simultaneously passing the hydrocarbons through and heating them in cracking coils arranged in series relative to each other to a temperature sufficient to crack the hydrocarbons and maintaining them while thus treated under sufficient pressure to prevent their vaporization during the cracking and carbonaceous deposition period, whereby the carbonaceous deposits are in a condition easily removed, then displacing the hydrocarbons in the apparatus with water by passing the water through the apparatus in the same direction of flow as the hydrocarbons, then discharging the water and generated steam together with the residual carbonaceous materials of reaction from the apparatus whereby the various elements of the apparatus are cleared of carbonaceous deposits, then displacing the water in the apparatus with hydrocarbons and again subjecting the hydrocarbons to the cracking reaction in a cycle of operations, substantially as described.

25. The process of cracking hydrocarbons and removing carbonaceous deposits which consists in causing the hydrocarbons to pass in streams of restricted cross section through suitable cracking coils to heat the hydrocarbons to a cracking temperature, then decreasing their rate of flow by passing them through an enlarged chamber and during this period while the temperature remains sufficiently high to crack the hydrocarbons, simultaneously maintaining them under sufficient pressure to prevent their vaporization, whereby the hydrocarbons are efficiently cracked and the carbonaceous deposits are left in a condition easily removable, then displacing the hydrocarbon in the apparatus with water and discharging the water and generated steam together with the residual carbonaceous materials of reaction from the apparatus whereby the various elements of the apparatus are cleared of carbonaceous deposits, then displacing the water in the apparatus with a fresh supply of hydrocarbons and repeating the cracking operation, substantially as described.

Valuation Engineers Needed By Government

WASHINGTON, June 14.—The United States Civil Service Commission has announced that applications will be received until Aug. 31 to fill vacancies in the income tax unit of the Bureau of Internal Revenue, the positions open being valuation engineer and associate valuation engineer. The former pays $3,600 to $4,800 a year and the associate's position $3,000 to $3,600 a year.

Duties involve the estimation of the quantity of oil and gas, coal or timber, in place; estimating their market values and other factors entering into the work of this unit. Competitors will not be required to stand examination, but will be rated on education, training and experience. Information and application blanks may be obtained from the commission at Washington, or from the secretary of any board of U. S. civil service examiners at the postoffice or customhouse in any city.

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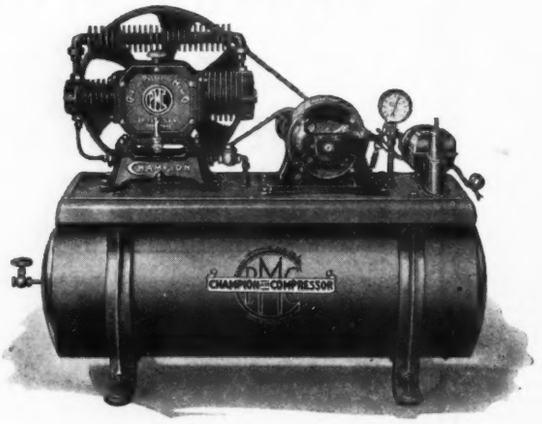

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THIS latest addition to the line of CHAMPION Air Compressors is a compact unit embodying the newest patented features in compressor design.

With a 28 gallon high pressure tank mounted integral with the base, the floor space required is only 19″x42″, and the over-all height is 36″.

Capacity is sufficent for giant pneumatic tires, its rating being 2 cu. ft. of air per minute at 250 R. P. M; working pressure—150 to 200 pounds.

Furthermore, it is particularly quiet in operation, the whir of the motor and fly wheel being pratically the only noise when it is running.

All parts entering its construction are, of course, the best that can be made, all gauged to the finest mechanical accuracy. Long life and dependability are assured. It's a CHAMPION.

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Complete Pneumatic Equipment for Filling Stations, Garage, Service Stations and Tire Shops

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Here And There

MARSHALLTOWN, IOWA, June 14 THE Marshall Oil Co. of Marshalltown has been bought by C A. and Fred A. Gustafson and M. W. Gustafson of Chicago. It is said here the property which includes branches at Minneapolis, Fargo, N. D., Mason City and Oskaloosa, Iowa, will still be operated as the Marshall Oil Co. The Kansas City plant of the Marshall was sold early in May to the Star Oil Co. of Chicago in which the Gustafsons are interested. Mr. Gustafson is president of the Diamond Products Co., paint manufacturers.

The management of the Marshall company will still be in the hands of J. W. Edenburn and the sales headquarters will remain at Marshalltown. The sales staff, of which Frank W. Ragen is manager, also will be retained. R. A. Bruns who was with Marshall for eight years has been covering his old territory out of North Kansas City for the Star Oil Co. since early in May.

The Marshall company was placed in the hands of a re-organization committee last January but was never under a receivership as was reported several times about the oil industry.

* * *

FORT WAYNE, IND., June 14.—The Lincoln Oil Co. this week is opening its fourth drive-in service station. This company, organized as a partnership in 1921, was later incorporated. Its officers are: A. C. Gladieux, president; J. B. Patten, secretary, and C. A. Gladieux, treasurer. The company now has four service stations and serves 44 dealers. It has a warehouse here and bulk station with storage for 45,000 gallons. It has two tank trucks and a truck to handle lubricating oils in constant use. It is distributor for Sunoco oils in Steuben, DeKalb, Allen, Whitley, Huntington and Adams counties.

* * *

KANSAS CITY, MO., June 14.—F. H. Minard, president of the Barnsdall Corp.; John L. Gray, president of the Barnsdall Refining Co., both of New York, and M. G. Eitelman, vice-president and general manager of the Barnsdall interests with headquarters at Kansas City, last week inspected the properties of the Barnsdall Refining Co., the corporation's distributing subsidiary, in the middle west.

* * *

BRADFORD, PA., June 15.—H. K. McMillin of the Bradford Gasoline Co. recently spent two weeks motoring through New York state telling the jobbers about B.B. (Bradford Best) products of the company. He reports he found business good and prospects encouraging.

* * *

KANSAS CITY, June 14.—O. H. Williams, president of the Mutual Oil Co.; A. J. Wolcott, general manager, and Paul Sauer, director of publicity, are making an extensive trip through the trade territory of the company. They will visit divisional offices and distributing points in Montana and Colorado and the company's refineries at Cowley and Glenrock, Wyo. The Mutual has under way extensive expansions, including entrance into Washington with headquarters at Spokane. Company officers say practically all of the territory west of the Mississippi is being served with Mutual products. The company's crude production has been increased to more than 23,000 barrels a day.

* * *

LOS ANGELES, June 14.—C. G. Bussey, superintendent of the Los Angeles garage of the Union Oil Co., of California, has placed on the market an auto truck signal which is gaining favor with Pacific coast motorists. The contrivance, patented by Mr. Bussey, is a simple red wooden hand arrangement which, by the operation of a lever goes up, straight out or down to indicate the course the driver wishes to pursue. The devices are being used on hundreds of Union Oil Co. trucks.

* * *

ARNOLD, NEB., June 14.—The bride of John H. Priess, owner and manager of the Priess Service station, Arnold, opened June 2, is writing advertising copy in verse. Three of the verses which appeared in an advertisement in an Arnold newspaper several days before the opening follow:

The new Priess service station
Is clean and up-to-date,
With one of the best equipments
You'll find throughout the state.

We're here to get the business,
To please and serve you well;
The best in oils and gasoline
Is what we aim to sell.

So come and see us, one and all,
On this our opening day—June 2
With every fill of gasoline
We'll give a prize away.

* * *

EASTLAND, TEX., June 14.—The Benwick Gasoline Co. expects to have its absorption plant on the Stubblefield ranch, south of Eastland, in operation by July 4. The plant has capacity to handle 8,000,000 cubic feet of gas daily and Louis Bendit, president and treasurer, says an ample supply of gas has been secured. The equipment was built by the Columbia Steel Tank Co., Kansas City, after special designs by Chadwick & Bendit, consulting engineers, who have applied for patents in this and foreign countries a number of new ideas embodied in the plant.

* * *

CORAOPOLIS, PA., June 17.—W. H. Fehsenfeld, Baltimore, president of the Red C Oil Co. and the Island Petroleum Co. inspected the Island's property in the Pittsburgh district a few days ago. He was accompanied by V. B. Ward, vice president of the Island.

* * *

COLUMBIA MISS., June 14.—The Standard Oil Co. has bought the service station here from the Marion Oil Co. and has leased it to W. O. Robertson and Virt Giless.

* * *

WICHITA, KAN., June 15.—Joseph Walsh, Mutual Oil Co., A. W. Nation, White Eagle Oil & Refining Co., both of Kansas City, and Joseph Longshore, Topeka, left Kansas City at 10:30 last Friday night expecting to be here by 6 o'clock Saturday morning and attend the dinner of oil men here Saturday evening. After being detoured over central all day Saturday on account of the floods they finally arrived for dinner at 7 p. m. they enjoyed the hospitality of Wichita oil men for three hours, and then set out for Kansas City.

* * *

TULSA, June 15.—The Warren Petroleum Co. moved its offices June 1 to 301 Atco building, Tulsa. Charles E. Brown, vice-president, says the company's sales of natural and motor gasoline in May were greater than in any previous months.

* * *

ALGONA, IA., June 15.—Gentry Galbreath, who has been in the employ of the Standard Oil Co., has bought a site here on which he will build a service station. The site is on the North Iowa pike and Danial Boone trail.

* * *

CORAOPOLIS, PA., June 17.—The Vulcan Oil Refining Co. expects to have its cracking plant in operation shortly. The company will sell a large part of the production of the unit through its own service stations.

* * *

JOPLIN, MO., June 14.—C. B. Hood, manager of the Joplin Oil Co. which markets in southwestern Missouri and Ottawa county, Okla., says the company has done a good business this year.

* * *

TULSA, June 14.—E. O. Mullin, salesman for Dean E. Foster, consulting engineer and manufacturer of the Foster baffle for gasoline plants, has returned from a month's business trip through Texas, Arkansas and Louisiana.

* * *

SPOKANE, WASH., June 14.—Machinery to be used in the construction of the Hursh-Sinclair refinery north of Hillyard has arrived and work on the 1,000-barrel plant will be started at once.

* * *

LEWISTOWN, MONT., June 14.—The Mutual Oil Co., Kansas City, is building a brick service station with double driveway here. It is said to be one of the finest in the northwest.

* * *

MURPHYSBORO, ILL., June 14.—The Mur-Du Oil Co. of Murphysboro has opened a bulk station at Willisville, Ill. It has storage for 19.000 gallons each of gasoline and kerosene.

* * *

KEWANEE, ILL., June 14.—Lawrence N. Fredeen has been appointed agent here for the Standard Oil Co., succeeding Andrew Bennett who was transferred to the Joliet territory.

* * *

GRAND FORKS, N. D., June 14.—John Munch, Phillip Munch and Berda A. Ewart, all of Kenmare, N. D., have incorporated the Kenmare Farmers Oil Co. with $5,000 capital.

* * *

ANN ARBOR, MICH., June 18.—The Staebler Oil Co. has been granted permission to build service stations at Detroit and Catherine streets and N. Main street north of Depot street.

* * *

SAN FRANCISCO, June 14.—Noah Frederick, Pacific coast sales manager for the MonaMobile Oil Co., is making a trip through the northwestern states and western Canada where the company has branches in each of the

41 Years of Scientific Refining

H-B-S-

Red and Pale
Paraffine Oils
Paraffine Wax
BRIGHT-STOCK

Lubricating
Cylinder
Engine
Fuel
Oil

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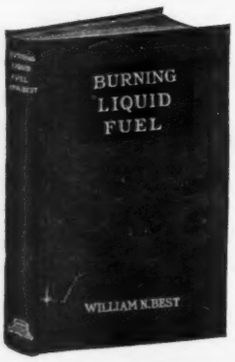
National Headquarters National Building
Cleveland, Ohio

THREE GREAT REFINERIES

Findlay	Coffeyville	Marietta
Ohio	Kansas	Ohio



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National Petroleum News
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larger cities. Mr. Frederick will make a check of the financial and crop conditions in the various districts where there is a demand for high grade eastern lubricating oils for tractors with a view to increasing the number of branches and enlarging the sales force.

* * *

CHICAGO, June 14.—James M. Judson, credit manager of the Sinclair Refining Co. recently was elected second vice-president of the Chicago Association of Credit Men, the largest single association in the National Association of Credit Men. This means he will be president in two years. Mr. Judson is also chairman of the committee having in charge the next meeting of refinery credit men, twenty-two of whom recently held a two-day session in Kansas City.

* * *

TULSA, June 15.—J. R. Cleveland, assistant sales manager of the Sagamore Oil Corp., Tulsa, is making a two-week trip calling on the trade in Arkansas, Missouri and Illinois. The Sagamore company started operating its Cushing refinery June 1. The Grandfield, Okla., plant is running 1800 barrels of crude daily, says H. P. Downs, general manager, who describes business as good.

* * *

TRENTON, N. J., June 15.—H. H. Townsend, general manager of the Citizens Oil Corp., Trenton, is visiting Chicago and other places to purchase additional equipment for his corporation, which is selling more than 1,000,000 gallons of gasoline and 25,000 gallons of lubricating oils a year.

* * *

REXBURG, IDA., June 14.—H. E. Poole of the Poole Oil & Gas Co. says business is picking up now that tourists are on the road headed toward Yellowstone National Park. Mr. Poole has taken over the distribution of Vico U motor oils in this territory.

* * *

HUMISTON, IOWA, June 14.—C. F. Schnee has started building a service station here. He expects to have it in operation about July 1.

* * *

EAST GRAND FORKS, MINN., June 14.—A. M. Karstrom, Crookston, Minn., auditor for the Home Oil Co., was married May 23.

* * *

MANITOWOC, WIS., June 14.—The Clark Oil Co. has bought a site at Washington and 12th streets for a service station.

* * *

MT. GILEAD, O., June 14.—The Mathews-Talmage Oil Co. of Mt. Gilead has taken a site in Marion, O., for a service station.

* * *

LYNCHBURG, VA., June 14.—The Indiana Refining Co. has leased a site here for a service station to cost about $3,500.

* * *

EAST GRAND FORKS, MINN., June 14.—The Standard Oil Co. is installing 30,000 gallons additional storage here.

* * *

GRAND FORKS, N. D., June 15.—The Texas Co. is building a bulk station here.

TAGOLENE

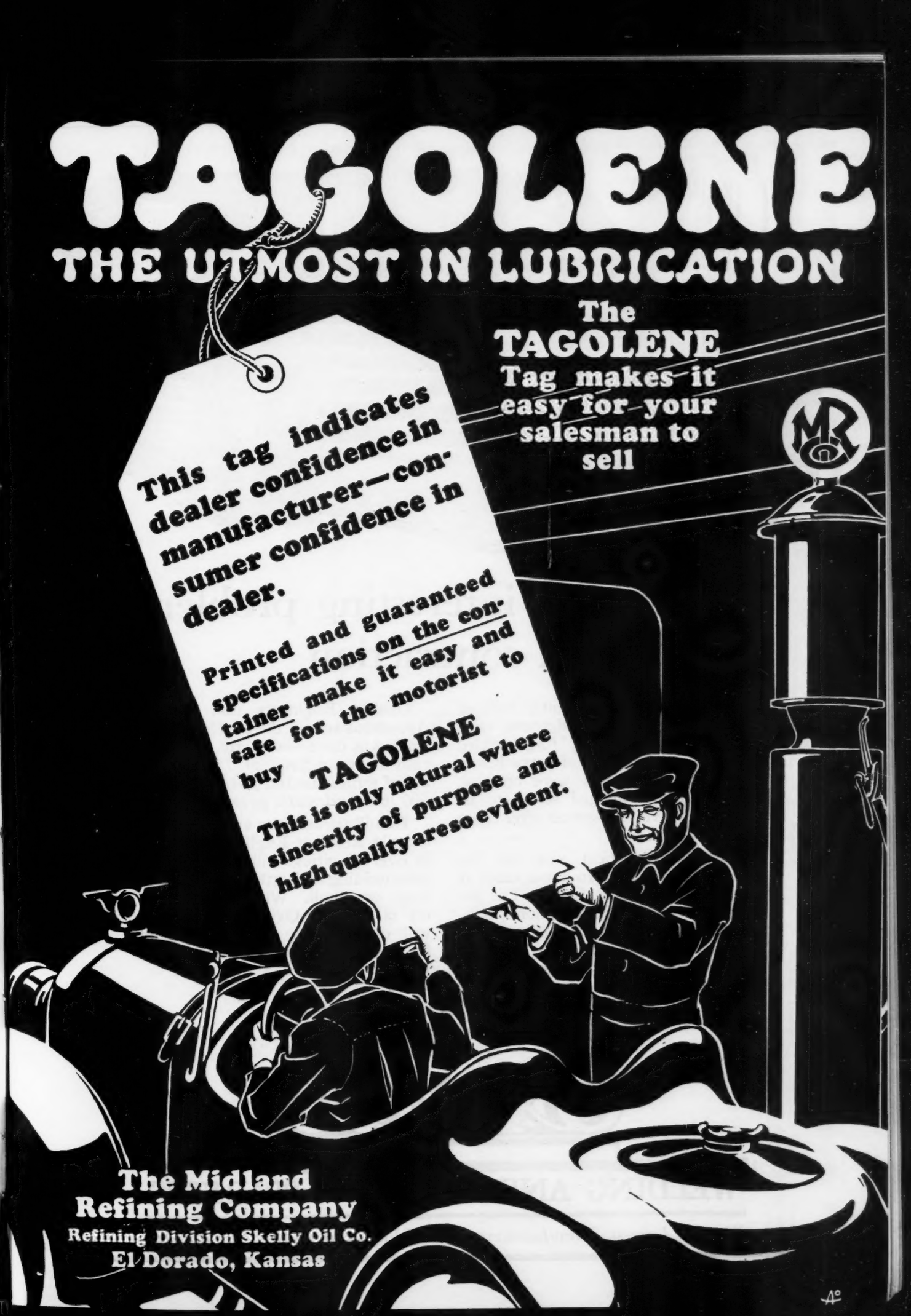
THE UTMOST IN LUBRICATION

The TAGOLENE Tag makes it easy for your salesman to sell

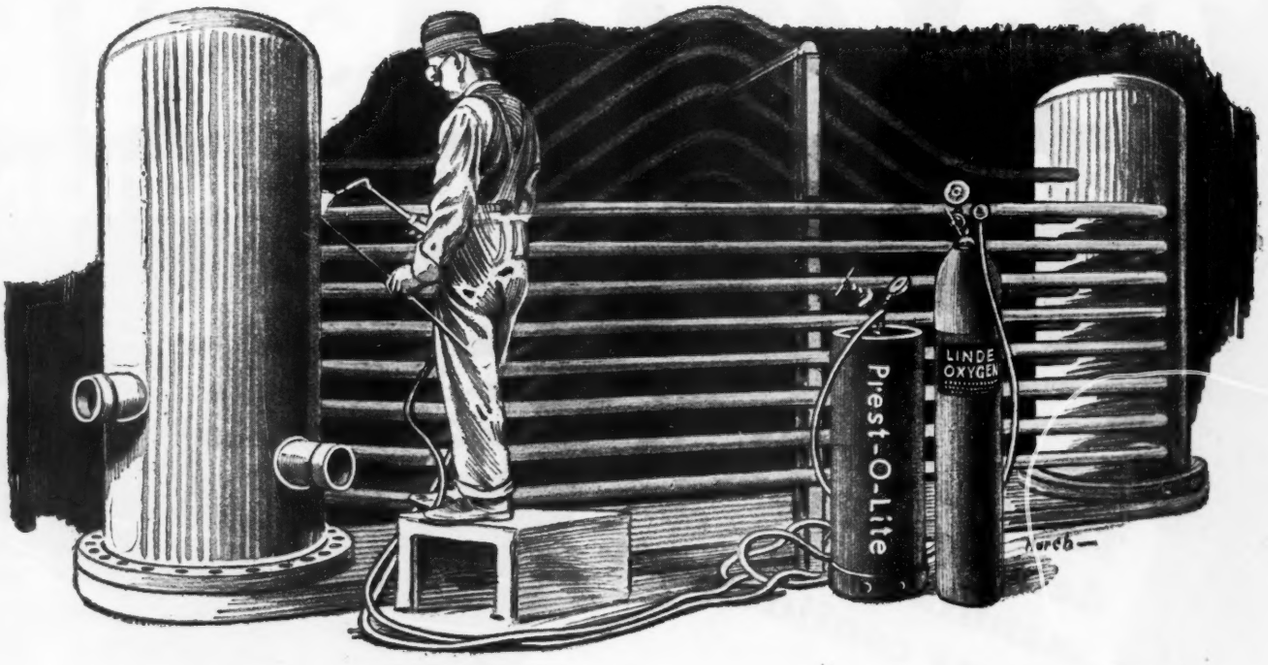
This tag indicates dealer confidence in manufacturer—consumer confidence in dealer.

Printed and guaranteed specifications on the container make it easy and safe for the motorist to buy TAGOLENE

This is only natural where sincerity of purpose and high quality are so evident.



The Midland Refining Company
Refining Division Skelly Oil Co.
El Dorado, Kansas



Solving an interesting problem in contraction

A Texas company recently ordered 54 large gasoline condensers, each consisting of 4 big forge-welded drums and 70 tubes of extra heavy 2 in. pipe. Drums were open at one end and flanged so as to be bolted or riveted together after tubes were welded in.

But *contraction* was the big stumbling block. In some cases it amounted to several inches. The job had to be precise as foundation specifications had to be met and coincidence between flanges and bolt or rivet holes between the two drums assured.

Oxweld Engineers and Oxweld Apparatus solved the problem. The work was done—correctly, economically—with a total of 7560 welds, *all of which tested perfect under 500 lbs. hydraulic pressure.*

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World's Largest Manufacturers of Welding and Cutting Equipment

New "Oilgraf" Includes All Stocks Of Crude Oil Available In U. S.

CLEVELAND, June 15

THE chart on the cover of this issue of **National Petroleum News** is an amplification of a similar chart formerly published monthly showing the amount of crude oil stocks in terms of days' supply. Stocks have generally been considered by petroleum economists and statisticians as crude oil held in pipe lines and on tank farms, and consumption as deliveries to refineries and exports.

It is the opinion of this publication that actual consumption is the amount of oil run to stills and exported oil. Therefore, in drafting the present graf, the amount of stocks is taken as the total of net pipe line and tank farm stocks east of the Rocky mountains, gross stocks of California and imported crude oil, mostly Mexican, held by imports, all the figures of which are compiled by the Geological Survey, and the domestic and foreign crude oil held by refiners, figures on which are compiled by the Bureau of Mines.

Daily average consumption is taken as the daily average runs to stills by refiners in this country plus the daily average exports of crude oil. The number of days' supply at the end of each month is obtained by dividing the sum of all stocks by the daily average consumption for that month.

The result of this method of figuring shows a higher number of the days' supply than when the stocks at refineries were left out of the figuring.

Before the first of this year, the two government bureaus considered imported topped oils as crude but beginning with the first of this year, the topped oils were classified as partly refined oils. This change shows up in the accompanying table as a decline in the amount of raw material held at refineries and in stocks of imported crude oil but it eventually will lead to a truer picture of stocks of crude oil actually available in this country.

The table and the cover chart show for 1921 and 1922 stocks including the topped oils in the "total stocks of crude oil" but for the four months of 1923 statistics on which are now available, the topped oils are omitted.

It will be seen from both the table and chart that stocks in relation to average daily consumption were greatest in June, 1922, but as topped oils were considered in stocks then, the stocks at the end of March, 1923, were probably as large were topped oils considered as crude by the government bureaus.

Runs to stills so far this year have averaged less than during the second half of 1922, but exports have run higher because of the increased capacity of Canadian refineries, which depend largely upon American crude oil.

Asks Suspension Of Rate Advance From Florida Ports To Inland Points

LOUISVILLE, KY., June 14.—The Standard Oil Co. of Kentucky has filed a petition with the Interstate Commerce Commission asking for investigation and suspension of the advanced rates on petroleum products from Jacksonville, Fla., Port Tampa, Fla., and other Florida coast points to bulk stations within the state. The advanced rates were published by the Atlantic Coast Line Railroad, the Georgia Southern & Florida Railroad, the Seaboard Airline Railway through J. H. Glenn, agent of the Atlanta Freight Tariff Bureau, publisher of the tariffs for those roads, effective June 15.

According to A. M. Stephens, traffic manager of the Standard of Kentucky, the determination of the question raised in the case is likely to be of importance to the whole oil industry as well as the companies directly interested in marketing in Florida, products shipped in by water and transported inland by rail.

Jurisdiction of the commission over state rates on petroleum products from waterside storage, is questioned. The petition filed by the Standard of Kentucky was for the purpose of making a test case in the event that the Interstate Commerce Commission assumed jurisdiction over such rates.

The plea in the petition follows:

"Protestant respectfully shows:

"That the Interstate Commerce Commission on March 5, 1921 in Docket No. 10862 (60,100 726-732) assumed jurisdiction over alleged intrastate rates on petroleum products from waterside storage at Port Tampa, Fla., originating in Texas and the Republic of Mexico, in consequence of which proceeding respondents have now published a revision of rates on gasoline and refined oils and other products designed to eliminate deviations from the long-and-short haul provision of the Fourth Section of the Interstate Commerce Act in the construction of rates primarily affecting the transportation of petroleum products from Jacksonville and Port Tampa, Fla., to bulk distributing stations of protestant within the same state.

"That respondents issued, effective June 15, 1923, Supplement No. 5 to Agent J. H. Glenn's South Atlantic Coastpoints Petroleum Tariff No. 3, I. C. C. A-395, Atlantic Coast Line Railroad Co. Tampa-Port Tampa Oil Tariff No. 1, I. C. C. B-2199 and Seaboard Air Line Railway Co. Tampa-Ybor City Oil Tariff No. 1, I. C. C. A-6892 to Boca Grande, Bradentown, Carrabelle, Jasper, Fort Myers, Palmetto, Punta Gorda, Sanford and Sarasota, Florida and intermediate stations, which schedules are filed for the express purpose of advancing rates on petroleum products from Jacksonville and Port Tampa, Fla., to so-called depressed points and all intermediate stations that will yield greater revenue in the aggregate as hereinafter indicated, than results from the operation of rates currently applicable from and to the same points. That respondents have proposed rates intending to

Total Crude Oil Stocks, Domestic And Imported, In America, Average Consumption And Days' Supply

1921	Pipe Line, Tank Farm Stocks, Domestic Crude	Crude Stocks at Refineries	Stocks of Imported Oil	Total Stocks of Crude Oil	Daily Average Runs to Stills	Daily Aver. Exports	Total Daily Consumption	Days' Supply All Crudes	Days' Supply Domestic
January	117,099,000	21,064,124	7,157,000	149,320,124	1,278,625	23,968	1,302,593	114.6	106.0
February	121,713,000	22,411,819	9,171,000	153,295,819	1,235,289	28,357	1,263,646	121.3	114.0
March	128,754,000	21,147,257	9,427,000	159,328,257	1,145,455	24,193	1,169,648	136.2	128.1
April	134,719,000	21,054,630	10,297,000	166,070,630	1,253,140	24,933	1,278,073	129.9	121.8
May	143,614,000	20,816,203	10,200,000	174,630,203	1,193,241	28,193	1,221,434	142.9	134.6
June	151,339,000	21,008,986	9,709,000	182,056,986	1,231,360	19,533	1,250,893	145.5	137.7
July	159,030,000	19,115,631	8,322,000	186,467,631	1,162,606	17,354	1,179,960	158.0	150.9
August	162,903,000	16,374,050	5,287,000	184,564,050	1,162,739	28,548	1,191,287	154.9	150.4
September	164,076,000	17,991,036	7,285,000	189,352,036	1,187,151	28,700	1,215,851	155.7	149.7
October	163,335,000	18,404,182	9,272,000	191,011,182	1,224,790	24,097	1,248,887	152.9	145.5
November	164,078,000	21,856,185	12,417,000	198,346,185	1,200,572	28,032	1,228,404	161.4	151.3
December	170,350,000	26,562,424	13,540,000	210,452,424	1,265,254	16,935	1,282,189	164.1	153.6
1922									
January	180,984,000	30,635,766	15,244,000	226,863,766	1,244,574	23,451	1,268,025	178.0	166.8
February	191,471,000	26,580,397	17,380,000	235,431,397	1,229,408	23,535	1,252,943	187.9	174.0
March	202,906,000	31,297,836	18,682,000	252,885,836	1,261,095	26,000	1,287,095	196.4	181.1
April	214,467,000	32,751,669	21,495,000	268,713,669	1,278,801	30,766	1,309,567	205.1	188.7
May	224,388,000	35,475,522	22,705,000	282,568,522	1,372,956	24,903	1,397,859	202.1	185.7
June	232,032,000	36,178,308	23,785,000	291,995,308	1,393,488	27,500	1,420,988	212.5	188.7
July	238,233,000	35,286,798	23,162,000	296,681,798	1,479,280	28,806	1,508,086	196.6	181.3
August	240,759,000	34,029,919	21,948,000	296,736,919	1,413,451	24,613	1,438,064	206.3	191.0
September	244,250,000	33,615,478	19,511,000	297,376,478	1,417,816	37,566	1,455,382	204.3	190.9
October	246,625,000	32,765,842	18,448,000	297,838,842	1,426,896	23,903	1,450,799	205.2	192.5
November	247,942,000	32,765,362	17,075,000	297,782,362	1,473,449	29,300	1,502,749	198.1	186.7
December	248,413,000	33,804,875	16,165,000	298,382,875	1,506,740	35,764	1,542,504	193.4	182.9
1923									
January	249,146,000	19,639,779	10,922,137	279,707,916	1,376,930	24,613	1,401,543	199.5	191.7
February	251,562,000	19,193,699	9,632,680	280,388,379	1,402,704	23,786	1,426,490	196.5	189.8
March	258,026,600	22,662,404	9,183,073	289,871,477	1,394,727	33,161	1,427,888	203.0	196.5
April	263,921,000	23,353,771	8,695,399	295,970,170	1,432,410	50,074	1,482,484	199.6	193.7

Speaking of Reputations

A high reputation is never the result of chance. Underneath it you will find the rock hewn foundation of real worth.

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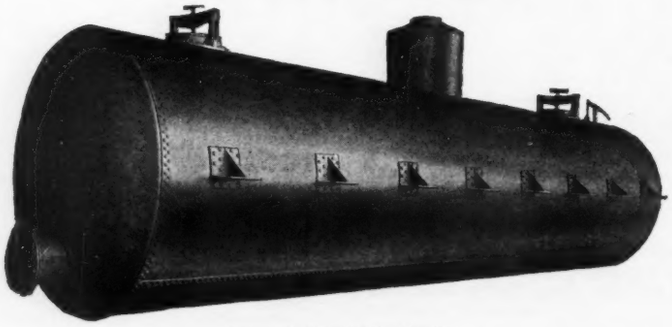
Still Construction is Symbolic



Standard "United" 10 x 40

Double riveted throughout. One piece head flanged and dished. Fire course is one sheet of still bottom steel. Shell built with four seams horizontally—NO ROUND-ABOUT SEAMS—offering less possibility of leaks. Lugs are our design of built up steel plate.

Let us quote you on your requirements. Quotations on standard or special equipment promptly sent without cost.

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"All American" Products have been satisfying Customers for 38 years continually

GASOLINE—KEROSENE—MOTOR—TRACTOR—CYLINDER OILS

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increase their revenue aside from the elimination of Fourth Section departures.

"This protestant respectfully petitions the Interstate Commerce Commission to suspend the advanced rates on petroleum and petroleum products from Jacksonville and Port Tampa, Fla., by reason of the absence of convincing evidence of the reasonableness per se of the rates proposed that the guiding rule to be followed in making the necessary revision to conform to the fourth section of the Interstate Commerce law should be the maintenance of the aggregate revenue, giving such consideration as is reasonable to the effect of the rate changes on the revenue of particular lines to distributing points where competition is met under the condition of waterside storage for certain branches of the petroleum industry supplying their trade at said points by bulk boat in competition with other branches of the industry which may be forced to adopt such method of transportation for self-protection.

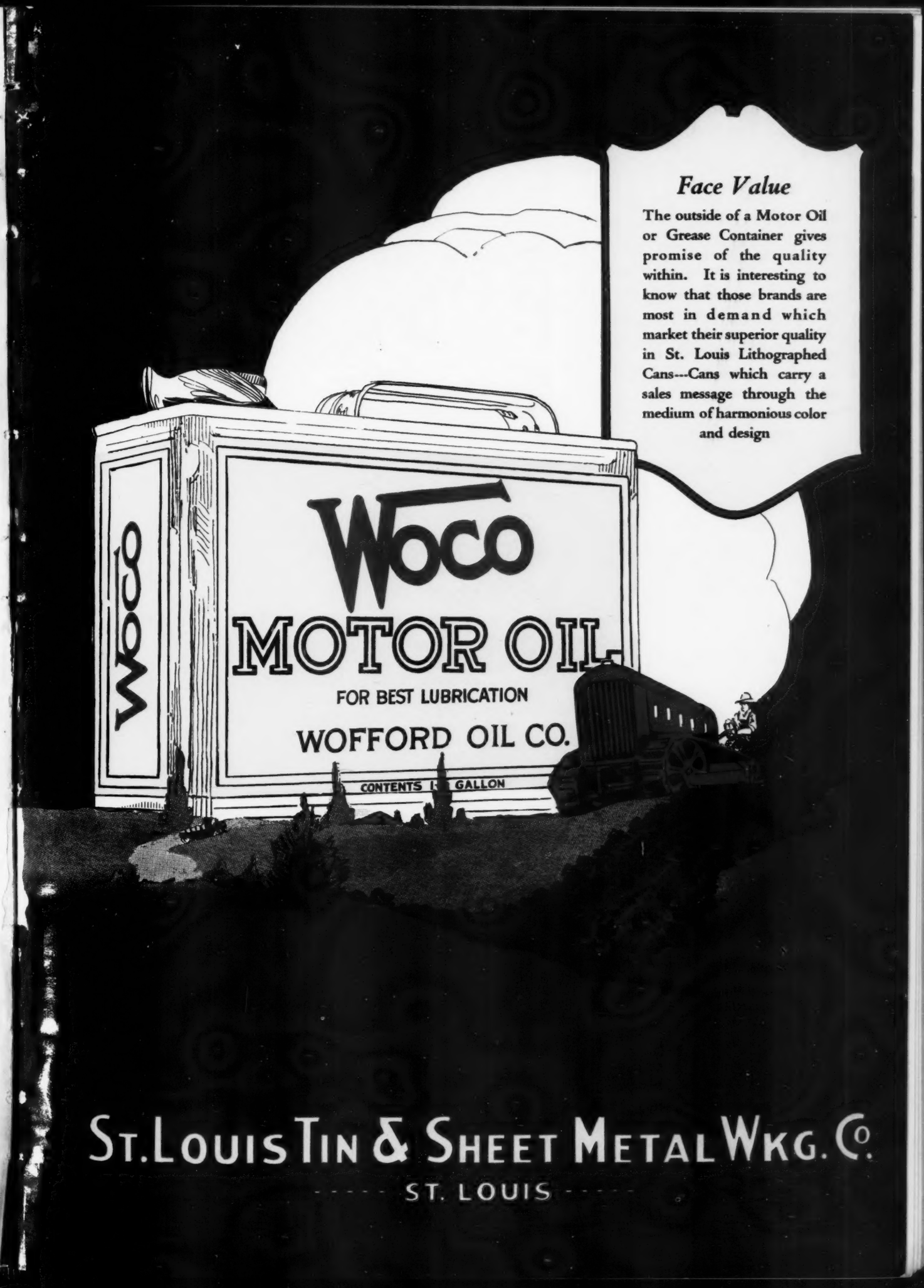
"That if these proposed and unwarranted advances on petroleum products to such points as Boca Grande, Bradentown, Carabelle, Fort Myers, Jasper, Punta Gorda, etc., are made effective, the result will be that the net revenue increase to carriers will be greatly in excess of twenty thousand dollars ($20,000).

"That these rates complained of, against which this company is protesting, were determined upon and arbitrarily advanced without knowledge of this protestant until May 31, with respect particularly to rates published in Atlantic Coast Line Railroad I. C. C. 2199 in violation of Section six of the Act to Regulate Commerce, and that under the statement of facts herein set forth and because of normal highly competitive conditions in the marketing of petroleum products within Florida, great injury will result to protestant by reason of proposed advances issued by respondents made effective June 15, and your honorable commission is earnestly and urgently requested to exercise its authority under Section 15 of the Act to Regulate Commerce and suspend the operation of said schedule and defer its use for a period of 120 days from May 25, 1923, and after full hearing make such order with reference to the schedules as may be proper."

On Tour Through East

CLEVELAND, June 15.—Allan C. Cooper, who likes to describe his job as a "roustabout" with the Tidal Refining Co., with headquarters at Tulsa, is on a tour through various refining points in the east, giving the refiners the benefit of the Tidal's experience in the best methods of handling natural gasoline at blending plants.

Mr. Cooper has been doing this same work in the Mid-Continent field in the past, and it has been so successful the company decided to enlarge his sphere of activity. Some of the ideas for the efficient and safe handling of the natural gasoline product Mr. Cooper has worked out himself. So many calls for this information came to the Tidal people that they decided to send Mr. Cooper out to give others the benefit of their experience. His present trip will take him up into Canada—on business strictly.


Face Value
The outside of a Motor Oil or Grease Container gives promise of the quality within. It is interesting to know that those brands are most in demand which market their superior quality in St. Louis Lithographed Cans---Cans which carry a sales message through the medium of harmonious color and design
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MOTOR OIL
FOR BEST LUBRICATION
WOFFORD OIL CO.
CONTENTS 1 GALLON
Woco
ST. LOUIS TIN & SHEET METAL WKG. CO.
ST. LOUIS

BUY your Containers as these concerns have done: first, with an eye for quality—the materials, the workmanship, the exclusive features of St. Louis design; second, with an eye for advertising value—the sales-pull that's added by St. Louis Art and Advertising Service.
There's no obligation when you write us for the facts.
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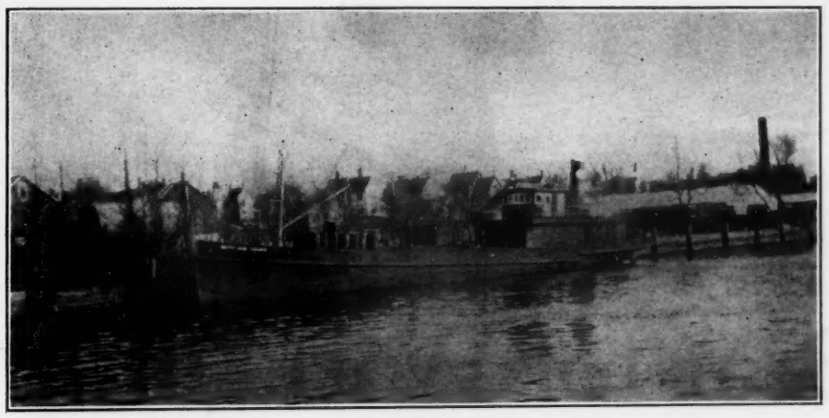
NOCO BRAND GREASE
Balkan REGISTERED LINSEED OIL SOAP J. JONES & BRO PHILADELPHIA PA
Balkan MOTOR-CUP GREASE
CUP EOCO GREASE
VERIBEST GRAPHITE CARRIAGE AND AXLE GREASE THE PURE OIL CO. MINNEAPOLIS, MINN
SWENEY
NEY GASOLINE & OIL CO. PEORIA, ILL.
ST. LOUIS TIN & SHEET METAL WKG. CO.
ST. LOUIS

Hearn Oil Co. Uses Power Boat To End Transportation Troubles

WILMINGTON, DEL., June 15.—THE Hearn Oil Co., Wilmington, is defeating the irregularities of railroad transportation by transporing gasoline from Marcus Hook to its bulk stations in Delaware and Maryland by boat. While it is believed the water transportation will be cheaper, comparative costs have not yet been worked out as the water service was a bit slow at the start because the crew of the Hearn company's boat was unfamiliar with some of the routes. After they have become fully familiarized with the routes they are to take, bette rtime on trips and lower costs are expected, according to C. P. Hearn, president of the company.

The company equipped the Betty Jane Hearn with seven tanks with a total capacity of 42,000 gallons. Fifty to 75 barrels may also be carried on the deck. The boat is 120 feet long, has 18-foot beam, and draws 9 feet 3 inches of water. It is powered with a Meitz-Weiss Diesel engine which burns about nine gallons of 34-36 fuel oil an hour, giving it one mile to the gallon of fuel.



Hearn Oil Company's boat Betty Jane Hearn

The company has bulk stations at Wilmington, Middletown, Milford and Seaford, Del., Chestertown, Denton, Cambridge, Salisbury and Centerville, Md. All but Middletown, Milford and Centerville may be reached by both water and rail. All but one of the stations has storage facilities for 50,000 or more gallons, thus being able to handle a full cargo of gasoline at one time.

The accompanying picture shows the Betty Jane Hearn tied up at the Salisbury station. The distance from the wharf to the tanks is only 50 feet. At Chestertown the station is about one-half mile back in the town from the wharf. Two 2-inch pipe lines were laid to the wharf. The boat's pumps are used to drive the gasoline and the station's pumps to draw it. A cargo can be unloaded in six hours in this manner, or about the same time as when the station is alongside the wharf.

The boat has been equipped with electric lights, hot water heat, and running water in the rooms. Every possible convenience has been provided for the comfort of the crew, Mr. Hearn said.

The first trip from Marcus Hook to Salisbury required 31 hours but when the crew becomes more familiar with the route, it is expected this time will be reduced considerably. And the company also will be free from tank car shortages and traffic congestion.

Survey Man Correlates Northern Colorado and Wyoming Formations

WASHINGTON, June 14.—From field studies of formations in an area extending from Perry Park., Colo., 35 miles due south of Denver, into central Wyoming, Willis T. Lee has prepared Bull. 751-A, U. S. Geological Survey of timely importance to the Rocky Mountain operator. This is entitled. "Continuity of Some Oil-bearing Sands of Colorado and Wyoming."

"Heretofore," says the author, "these rocks have been known under a variety of names, and an attempt is made to clarify the stratigraphic problems by showing the continuity of beds through areas where they have been known under different names. This is done by comparing the sections measured at short intervals. An understanding of the continuity of the beds over wide areas, as well as of their stratigraphic and structural relations, gives a basis for their proper rating in commercial exploitation."

In his conclusions, the writer says:

"The sections platted in this report tend to confirm the opinion, previously advanced by the writer, that the Dakota group in northeastern Colorado is not divisible on physical grounds into Lower Cretaceous and Upper Cretaceous, as these subdivisions are generally understood, but is a single group of variable beds formed near the margin of the transgressing Cretaceous sea and as such constitutes the basal portion of an indivisible Cretaceous series.

"When the group is traced laterally for long distances, however, difficulties are met in making this assignment. The lower beds of the group seem to be identical with beds in southern Colorado and Kansas that have been assigned by paleontologists to the Comanche series. These beds have been called Lower Cretaceous by some geologists and Upper Cretaceous by others. The question of their geologic age has been discussed by the writer, who concludes that the beds in question belong to the Upper Cretaceous series.

"Tracing the group northward from Colorado Springs, where these beds have been called Lower Cretaceous, discloses changes whose significance is not fully understood. But there is little room for doubt that the lower conglomeratic sandstone, called Purgatoire in some places, lower Dakota in others and lower Cloverly in others, is a continuous formation. It should be noted further in this connection that in some places in northern Wyoming beds that contain fossil plants of Kootenai age separate this conglomerate from the underlying Morrison. The colored lower shale thickens northward and has been correlated by some geologists with the Kootenai formation of Montana and by others with the Fuson formation of the Black Hills.

Classifying Middle Formations

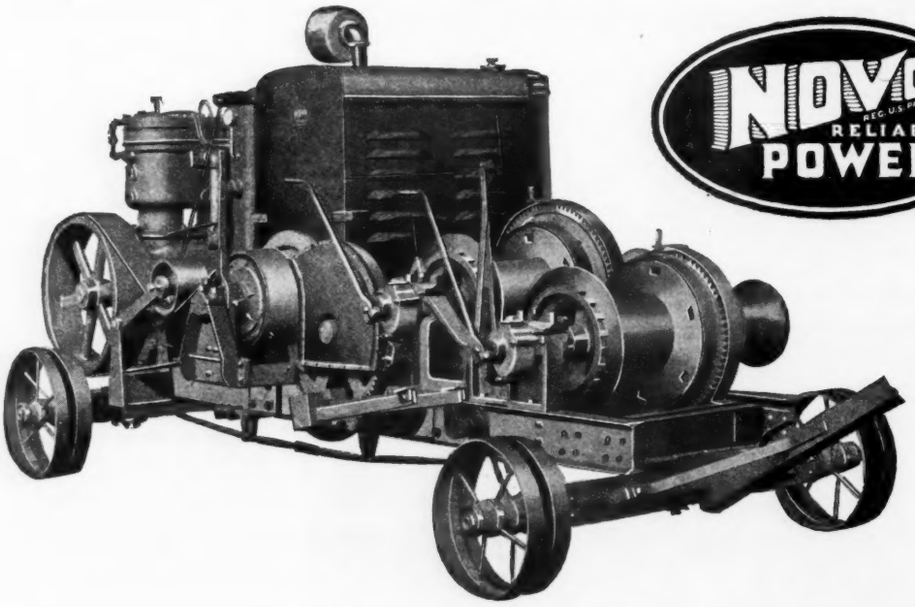
"The middle sandstone is known under several different names—upper Cloverly, 'true Dakota,' and Greybull. The middle shale, in the writer's opinion, is the Glencairn of Colorado Springs, the lower part of the Benton shale of southern Wyoming, and the lower part of the Thermopolis shale of the Big Horn Basin. The upper sandstone (Muddy sand) occurs near the middle of the Thermopolis shale and is probably the same as the Newcastle sandstone of eastern Wyoming.

"Whether the strata of this group are wholly of Upper Cretaceous age or in part Lower Cretaceous may be only an academic question, of no practical importance. But the facts underlying the stratigraphic relations implied in those names are of prime importance economically. If the lower part of the group is Lower Cretaceous in one place and Upper Cretaceous in another place, the continuity of the beds as shown by the correlated sections cannot be correct, and in its place there must be certain physical relations that have not yet been discovered.

"The writer's work in the field tends to show that the formations are essentially continuous from place to place, so far as his examinations have extended, and belong to a single series of rocks. It warrants a question as to the propriety of assigning the lower conglomerate and shale to a separate series—the Lower Cretaceous.

"Several economic applications of this work are immediately apparent. Perhaps the most important is the knowledge that the upper sandstone or Muddy sand is present along the east front of the Rocky Mountains from points in northern Wyoming to Colorado Springs, Colo., and that almost everywhere it is underlain by a body of dark bituminous shale. The character of this sandstone and shale makes them important contributors of oil in Wyoming and possibly also in Colorado.

"The knowledge that a sandstone known as the Dakota in some regions



"A Bear for Work"

THERE'S tank construction, buildings, the laying of mains, bridges, culverts and other like jobs in all oil fields that can be done quicker, easier, cheaper and better.

Such jobs are the work of the Novo Combination Hoist and Air Compressor.

This new unit has already won its place when and where time, labor and costs count.

Its work is not confined to hoisting materials and supplying compressed air—it will do many other things. "A bear for work" says one owner.

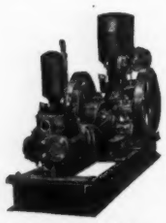
The hoist can be used in various ways—to unload pipe and casings—also for erecting structural steel, tanks, etc.

The air compressor can be used for all kinds of riveting.

In large oil fields there is almost a daily use for a hoist or a compressor.

The Novo 2-in-1 Combination is a handy unit. One of its big advantages is its portability—it can be easily and quickly moved around.

The first cost is not large, the savings it makes are large, its upkeep is small.

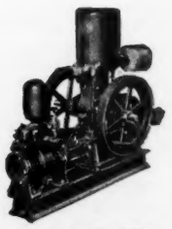


TYPE W PUMP

Write for Bulletin No. 113
which contains full description

NOVO ENGINE CO.
Clarence E. Bement, Vice-Pres. & Gen. Mgr.
LANSING — MICHIGAN

NEW YORK OFFICE, Woolworth Building
CHICAGO OFFICE, Old Colony Building



TYPE U PUMP

is in fact the Muddy sand and that below it are two other sandstones which may be oil bearing is also of primary importance. Barrenness of one or even of two of these sands need not mean that all three are barren. These three sandstones of the Dakota group have been tested comparatively little in southern Wyoming and northern Colorado, and many of the wells put down have terminated in the Muddy sand.

"The attention which this work draws to the presence of colored or variegated beds above the lower sandstone of the Dakota group is also timely. Ordinarily colored shales below the somber beds of the Benton have been interpreted as Morrison, and it has been reasoned that chances of oil production from these or lower beds were negligible, whereas in many places the lower sandstone would be reached if the variegatd beds were penetrated for a depth of 20 to 100 feet. Although the lower sandstone of the Dakota is not of great promise as an oil-bearing sand, it should unquestionably be tested where a test can be made without prohibitive expense.

"The persistently conglomeratic nature of the lower sandstone should also be emphasized. Some of the overlying beds are slightly conglomeratic, but the lower sandstone is persistently so. This characteristic may not permit certain recognition of this sandstone, but lack of conglomeratic material in drill cuttings may justify the conclusion that the lower sand has not been reached."

WASHINGTON, June 14.—In order to secure general efficiency in the administration of the fiscal petroleum workings at Comodoro Rivadavia, the executive of Argentina, in a decree dated April 14, placed the direction of these activities in the hands of a board composed of Carlos Madariaga, Eduardo Zuberbuhler, Emilio Palacios, Raul Carranza, Julio Pena, and Napoleon Paz, says the Department of Commerce. Col. Enrique Moceoni, the present director, will assume the chairmanship of the board of directors.

At the same time these appointments were announced a statement was also made that the petroleum administration is considering the construction of a large refinery in Buenos Aires, from which pipe lines will be laid to the site of large industrial plants in the city and surrounding suburbs for the purpose of supplying these enterprises with fuel oil. These latter plans, however, according to a statement by the director, have as yet assumed no definite form.

DAYTON O., June 14.—W. E. Talbot, general manager of the Refiners Oil Co., here states that his company has just bought out the Robinson Oil Co. at Portland, Ind. The company was owned and operated by Glen Robinson, who has been retained as branch manager. The business of the Portland branch like that of the other branches will be handled from Dayton headquarters.

The new property consists of two drive in filling stations and four tank trucks. Mr. Talbot says his company plans to erect a new bulk plant and to cover the territory with tank wagon routes within a radius of 15 or 20 miles of Portland. This branch makes the fourteenth acquired by the Refiners company which expects to add two more during the year.

BEFORE the HANDY BEN Grease Pump became well known, it was the universal opinion of both oil jobbers and garage men to expect a grease pump to be "All Shot" after handling 3 or 4 barrels of grease.

Naturally — when our pumps began passing the 10, 15 and even 25 barrel mark, *giving perfect service the year 'round*, you can imagine the talk they created.

I wish every jobber and user could sit at my desk and check reports. The experience would thoroughly convince you that HANDY BENS outlast and out-service any similar device marketed today.

Without obligation write for complete information and TRIAL PUMPS. Do it TODAY! Ask for circular M-1 "Getting the Grease and Oil Business".

Bert Bennett
President

Bennett Injector Company
Muskegon, Michigan
Inventors and Manufacturers of Grease and Oil-handling Devices

Help Your Salesmen

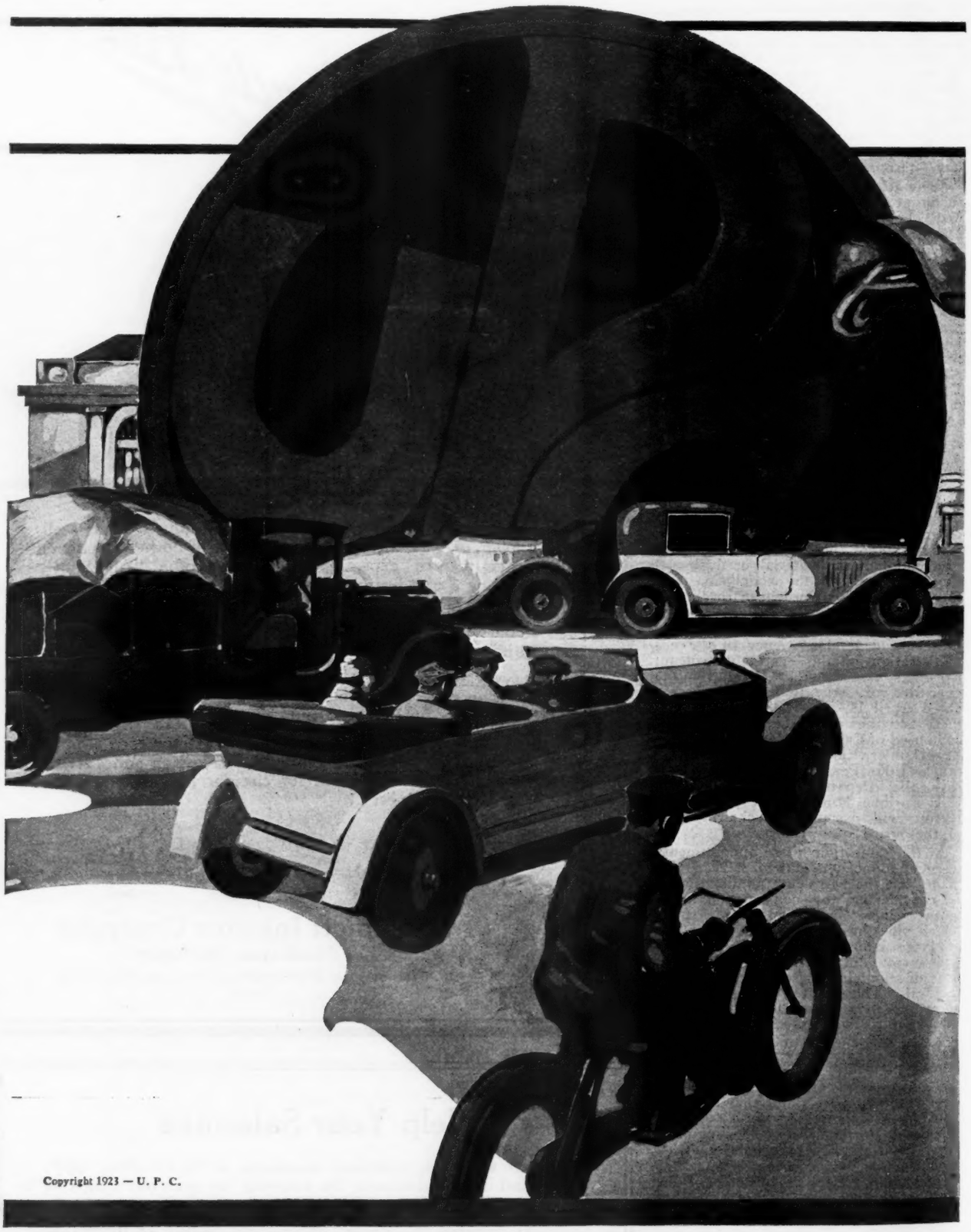
to acquire a working technical knowledge of the selection, application and use of lubricants, by ordering for each one a copy of the PRACTICE OF LUBRICATION by T. C. Thomsen.

It discusses the origin, nature and testing of lubricants and every phase of lubrication engineering.

It is $6 a copy. Make your check payable to—

National Petroleum News

825 Caxton Building **Cleveland, Ohio**



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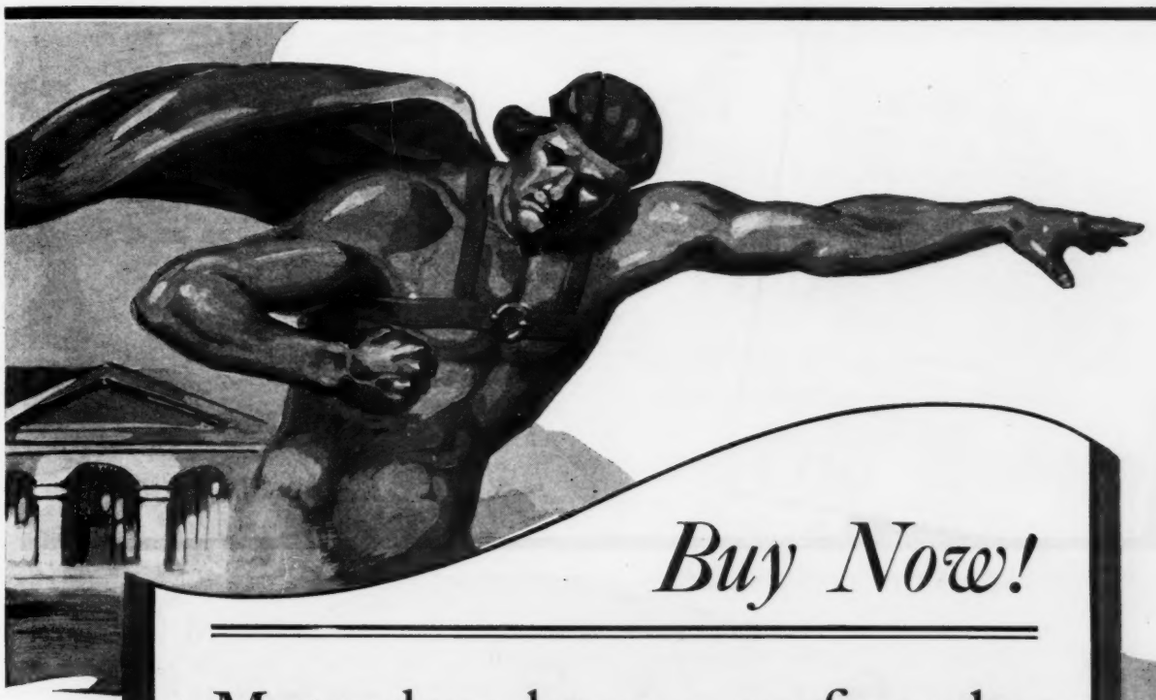
FROM A CAN — TO A CARGO

MOTOROILS



Buy Now!

Motordom knows no finer lubricants than *U.P.C. Motoroils.* Science can't produce anything better—and money can't buy anything superior. Shipments made in tank cars or wood and iron barrels.

Phone, wire or write for Quotations.

UNION PETROLEUM COMPANY

PHILADELPHIA – CHICAGO

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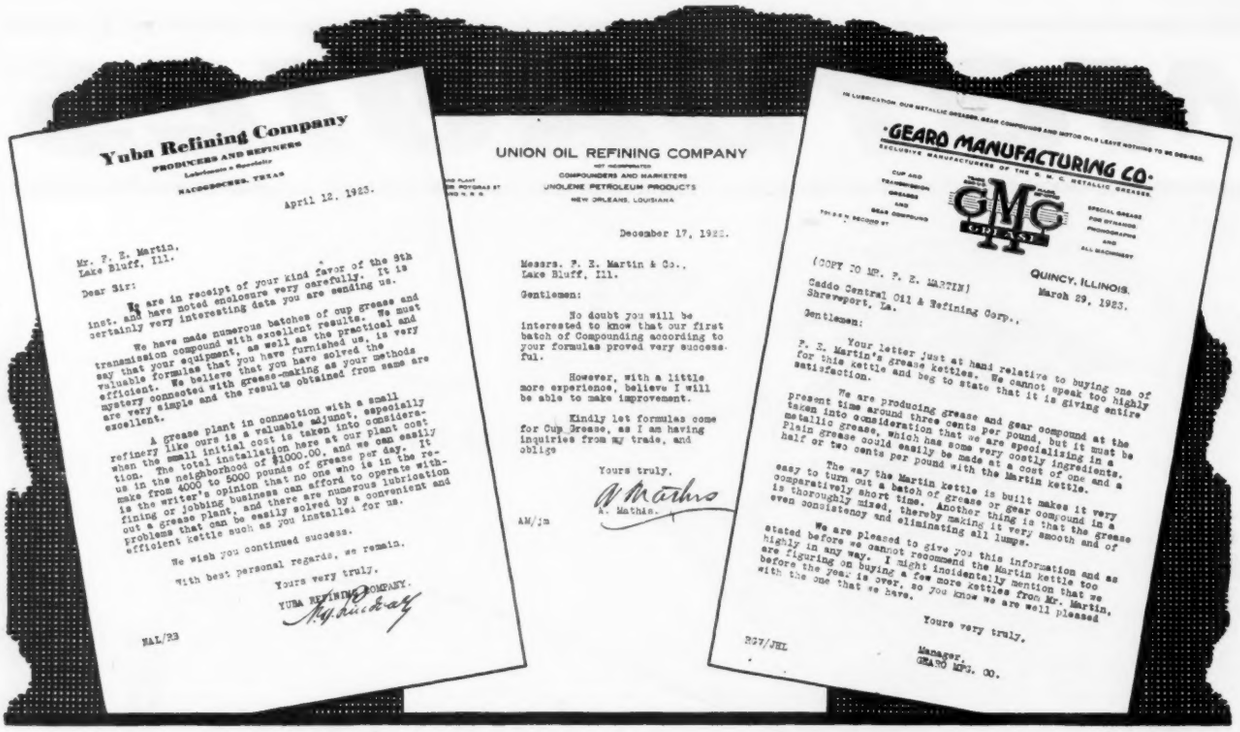
SAN FRANCISCO

OIL CITY, PA.

DALLAS, TEXAS
TULSA, OKLA.



Yuba Refining Company
PRODUCERS AND REFINERS
HACKOBUCKEE, TEXAS

April 12, 1923.

Mr. F. E. Martin,
Lake Bluff, Ill.

Dear Sir:

We are in receipt of your kind favor of the 9th inst. and have noted enclosure very carefully. It is certainly very interesting data you are sending us.

We have made numerous batches of cup grease and transmission compound with excellent results. We must say that your equipment, as well as the practical and valuable formulae that you have furnished us, is very efficient. We believe that you have solved the mystery connected with grease-making as your methods are very simple and the results obtained from same are excellent.

A grease plant in connection with a small refinery like ours is a valuable adjunct, especially when the small initial cost is taken into consideration. The total installation here at our plant cost us in the neighborhood of $1000.00, and we can easily make from 4000 to 5000 pounds of grease per day. It is the writer's opinion that no one who is in the refining or jobbing business can afford to operate without a grease plant, and there are numerous lubrication problems that can be easily solved by a convenient and efficient kettle such as you installed for us.

We wish you continued success.

With best personal regards, we remain.

Yours very truly,
YUBA REFINING COMPANY.

MAL/33

UNION OIL REFINING COMPANY
NOT INCORPORATED
COMPOUNDERS AND MARKETERS
UNOLENE PETROLEUM PRODUCTS
NEW ORLEANS, LOUISIANA

December 17, 1923.

Messrs. F. E. Martin & Co.,
Lake Bluff, Ill.

Gentlemen:

No doubt you will be interested to know that our first batch of Compounding according to your formulas proved very successful.

However, with a little more experience, believe I will be able to make improvement.

Kindly let formulas come for Cup Grease, as I am having inquiries from my trade, and oblige

Yours truly,
A. Mathis.

AM/jm

GEARO MANUFACTURING CO.
EXCLUSIVE MANUFACTURERS OF THE G. M. C. METALLIC GREASES.
GMC
QUINCY, ILLINOIS.

(COPY TO MR. F. E. MARTIN)
March 29, 1923.

Caddo Central Oil & Refining Corp.,
Shreveport, La.

Gentlemen:

Your letter just at hand relative to buying one of for this kettle and beg to state that it is giving entire satisfaction.

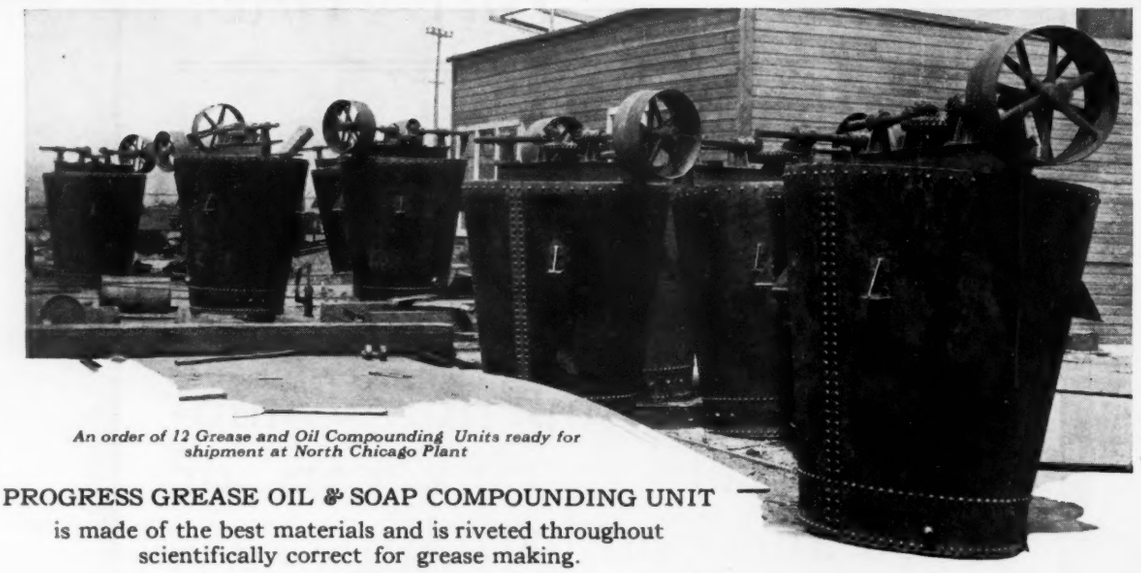
We are producing grease and gear compound at the present time around three cents per pound, but it must be taken into consideration that we are specializing in a metallic grease, which has some very costly ingredients. Plain grease could easily be made at a cost of one half or two cents per pound with the Martin kettle.

The way the Martin kettle is built makes it very easy to turn out a batch of grease or gear compound in a comparatively short time. Another thing is that the grease is thoroughly mixed, thereby making it very smooth and of even consistency and eliminating all lumps.

We are pleased to give you this information and as stated before we cannot recommend the Martin kettle too highly in any way. I might incidentally mention that we are figuring on buying a few more kettles from Mr. Martin, before the year is over, so you know we are well pleased with the one that we have.

Yours very truly,
Manager,
GEARO MFG. CO.

RGY/JHL



An order of 12 Grease and Oil Compounding Units ready for shipment at North Chicago Plant

PROGRESS GREASE OIL & SOAP COMPOUNDING UNIT
is made of the best materials and is riveted throughout scientifically correct for grease making.

Sell More BETTER GREASES

THE difference in the cost of High Quality Greases and greases made primarily for price is the difference in the cost of the mineral oil used.

The other materials used in the manufacturing of greases such as, hog, beef or horse fats and lime (in a small way) for hard oil, cup grease, solidified oil, etc. and caustic soda for fiber, sponge and gear greases, are a small part of the finished product, and are easily obtainable as needed. As a base you have a lime or soda soap.

Why not reduce these to greases of any desired consistency, using your own good 28 parafin or even better grades of neutrals or red oils? in place of refinery residual "grease oils".

Make and pack your supply of greases, as you need them or in spare time. The average jobber carries 85 to 97% of the materials needed for grease making in his storage tanks.

If you already have power and steam, the outlay for the compounding unit itself is small.

We furnish the users of our equipment all necessary formulae without any additional charges, and will assist them in developing any specialties in water soluble mineral, coal tar or pine oils, or automobile or sanitary items that may have come within the range of our 40 years practical experience.

F. E. MARTIN & CO., Lake Bluff, Ill.

(A SUBURB OF CHICAGO)

New Books

The "Oil & Petroleum Manual" for 1923 (Fourteenth annual issue) by Walter R. Skinner, editor and proprietor, "Mining Manual & Mining Year Book" has just been issued. Price $2.50 net (post free).

Since its inception in 1910 the Oil & Petroleum Manual has been recognized as a standard work of reference on the oil industry.

This year's issue contains full particulars of 650 companies, producers, refiners, carriers—pipe and steamship, and oil finance companies operating in all parts of the world. Special attention has been directed to the principal American and foreign companies. Lists are also given of the officials connected with the companies, and comprise 2082 directors, 334 secretaries, and 200 consulting engineers, managers, agents, etc., their names and addresses and company connections.

The particulars of each company include the directors and other officials, date established, location of property, purchase consideration, number of wells sunk, oil production, and description of work in progress, capital, if offered to the public, calls, dividends and financial position as disclosed by accounts, also highest and lowest prices of the shares for the last three years and latest price.

A table showing the monthly production of the principal companies known on the London Stock Exchange for 13 months ended April 30, 1923, is also given, together with the world's annual production of petroleum since 1914 from the principal producing countries.

Other useful features are a glossary of technical terms by the use of which developments can easily be followed; liquidation list of 708 oil companies by which obsolete securities can quickly be traced and a directory of manufacturers and exporters of oilfield equipment. The book is published at 15, Dowgate Hill, Cannon street, London, E. C. 4.

Copies can be seen at and obtained from: Oil Trade Journal, 350 Madison avenue, New York City, New York, U. S. A. Price $2.50 net. Post free.

New Map Of California

WASHINGTON, June 14.—A map showing the oil and gas fields of California, just issued by the Department of the Interior, through the Geological Survey, is therefore of special interest. The map, which measures 44 by 48 inches and is on the scale of 1,506,880, or 8 miles to the inch, shows the oil and gas fields in green, the pipe lines and refineries in violet, the cities, towns, and railroads in gray, and the streams in blue.

This map is one of a series showing the oil and gas fields of different States already published or being prepared for publication by the Geological Survey Maps of Louisiana, Oklahoma, Kansas, Illinois, Pennsylvania, Wyoming, West Virginia, Kentucky, and California have already been published, and may be obtained from the Director of the Geological Survey, Washington, D. C. A charge of 50 cents a copy is made to cover costs incidental to engraving and printing.

Large Enough

To Own Eleven Gasoline Plants
And Our Own Fleet Of Tank Cars

Small Enough

To Give Close And Immediate
Attention to All Orders

Young Enough

To Inject Pep And Enthusiasm
Into that thing—Called Service

Old Enough

To Know That Highway Natural
Gasoline Products Are Business Builders

OIL REFINING HIGHWAY CORPORATION

We are specializing in the following grades of motor natural gasoline, and can highly recommend them for winter use:

Highway Gasoline 60-62, 440 E. P.
" " 64-66, 437 E. P.
" " 66-68, 435 E. P.
Natural Gasoline, Grades B, D, E, & F.

The latter for refiners and jobbers who prefer blending their own products.

HIGHWAY OIL REFINING CORP.

Tulsa **Okla.**

Do You Know These Things About Fuel Oil?

Details on how to use fuel oil—low grades and high—installation, storage, oil burners, rules and requirements of the National Board of Fire Underwriters, present and future conservation methods and specifications for fuel oil.

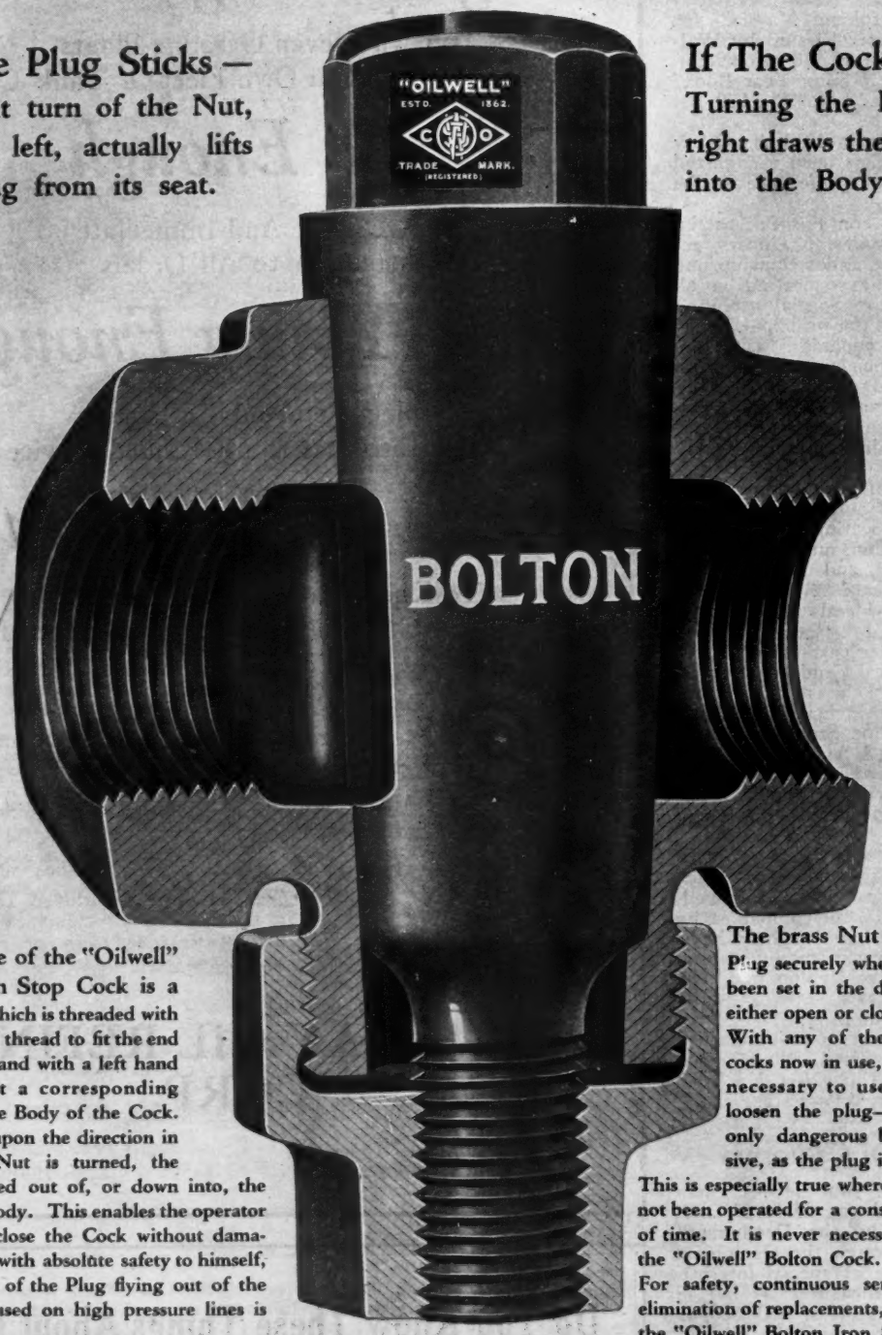
Just attach your check for $12 to this ad for a copy of AMERICAN FUELS by Bacon and Hamor, and return it to us.

National Petroleum News
801 Caxton Building **Cleveland, Ohio**

The Bottom Nut Does The Work

If The Plug Sticks —
A slight turn of the Nut, to the left, actually lifts the Plug from its seat.

If The Cock Leaks —
Turning the Nut to the right draws the Plug down into the Body.



The feature of the "Oilwell" Bolton Iron Stop Cock is a brass Nut, which is threaded with a right hand thread to fit the end of the Plug, and with a left hand thread to fit a corresponding thread on the Body of the Cock. Depending upon the direction in which the Nut is turned, the Plug is forced out of, or down into, the seat of the Body. This enables the operator to open or close the Cock without damaging it, and with absolute safety to himself, as all danger of the Plug flying out of the Cock when used on high pressure lines is eliminated.

The brass Nut will lock the Plug securely when the latter has been set in the desired position, either open or closed.

With any of the ordinary stop cocks now in use, it is frequently necessary to use a hammer to loosen the plug—a method not only dangerous but also expensive, as the plug is often broken. This is especially true where the cocks have not been operated for a considerable length of time. It is never necessary to hammer the "Oilwell" Bolton Cock.

For safety, continuous service, and the elimination of replacements, we recommend the "Oilwell" Bolton Iron Stop Cock.

Write for "Oilwell" Bolton Iron Stop Cock Bulletin No. 30 — or get a copy at any of our 80 Branch Stores

Oil Well Supply Co., Pittsburgh, U.S.A.

NEW YORK SAN FRANCISCO LOS ANGELES TAMPICO LONDON

OILWELL SUPPLY CO

World's Largest Manufacturers of Oil Field Equipment

PRODUCTION SECTION

Panhandle's New Strike Is Waiting On Tankage

AMARILLO, June 16.—Arrival of tankage is being awaited before final completion of the Whittington well, on the Sanford tract, south Hutchinson county, reported last week as a new strike 10 miles from the nearest producers, on the Burkburnett ranch in Carson county, to the south.

Estimates on the Whittington well range from 500 to 1000 barrels, based on its performance to date. The well has filled a 500-barrel storage tank, in less than 24 hours actual producing time, it is reported. The bottom of the hole is caving, and the well is flowing through the cave, which an accident to the machinery prevented cleaning out early in the week.

Approximately 50 million feet of gas is being produced daily, from the various gas sands, encountered between 2000 and 2800 feet.

Prairie Report Shows May Shipments Decline

Staff Special

TULSA, June 16.—Shipments of the Prairie Pipe Line Co. during May declined considerably, and fell below the 160,000 barrel-day average which had been maintained for the five preceding months, and were also under a total of 5,000,000 barrels for the first time since last February. May shipments totaled 4,872,747 barrels, as compared with 5,067,247 barrels during April. Daily average during May was 157,185 barrels, as against 168,908 barrels in April. Inasmuch as the Prairie's runs from producers' tanks are thought to average something like 225,000 barrels daily, it is evident that the company is placing considerable oil in storage.

Shipments and daily averages of the Prairie Pipe Line Co. during the past six months have been as follows:

Month	Shipments	Daily Average
December, 1922...	5,170,889	166,803
January, 1923	5,085,840	164,059
February	4,572,411	163,300
March	5,093,019	164,000
April	5,067,247	168,908
May	4,872,747	157,185

Travel Heavy; Roads Mired; Destination?

KANSAS CITY, MO., June 14.—The comment of James O'Neill Bruen, Kansas producer, on the present condition of operators in certain old settled territory, is as follows:

Cost of producing in Mid-Continent, in old settled territory:

1921 cost per barrel, including depreciation and depletion $2.28

Not including depletion .. 1.61

1922 cost per barrel, including depreciation and depletion, ... 2.06

Not including depletion ... 1.83½

Selling price, $1.30. Answer—?

Pennsylvania cost per barrel, $4.00. South Penn deficit in 1922, $1,200,000.

Question. "Where do we go from here?"

HOUSTON, June 19.—While no definite announcement has been made, rumors are current here that operators in the Smackover, Ark., field are planning to hold a meeting this week to plan a cessation of operations. Where the movement is originating is not known and major operators here who have interests in Smackover have had no advices so far.

Powell Field Promises Big Output By Autumn

HOUSTON, June 15.—U. S. Texas Oil Corp's. No. 1, J. O. Burke test in the Powell field of Navarro county is a 3000 barrel, initial production well at 2844-2850 feet. It came in flowing 38.8 gravity oil at 88 degrees F. temperature.

The U. S. Texas Oil Corp., controlled by Frankel Brothers of New York City, previously operated in the Mexia field and became active at Powell when development in the latter territory got under way.

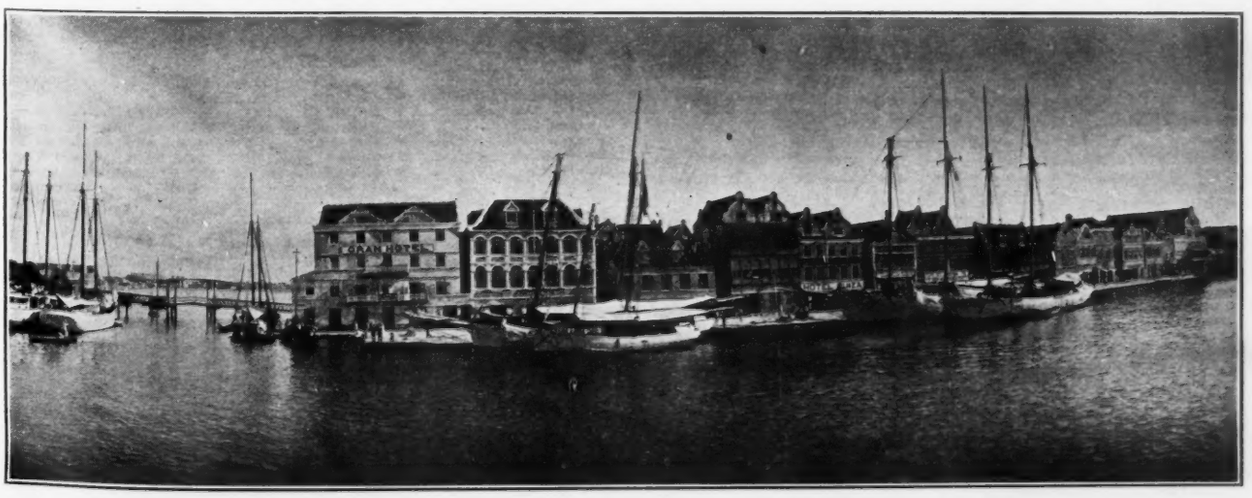
This, its first Powell field well, is located 900 feet northeast of the McKie well of the J. K. Hughes Development Co., in the H. G. Anderson survey, on the north side of Chambers Creek.

Humphreys Oil Co's. No. 1 Kent, in the Chambers Creek section of the Powell field, is a 4500-barrel initial production well at 2856 feet, bringing the daily current production of this Navarro county field to approximately 12,000 barrels.

As the week ended, the U. S. Texas Oil Corp's. well was making 2800 barrels; the J. K. Hughes Development Co's. well 5400 barrels and the original Powell well group about 350 barrels together.

Production continues trending southwesterly with the most important operations near or south of Chambers Creek, which is a mile or more south of the original Powell field wells. The conviction is growing among operators that this section is the site of important accumulation of oil and that 100,000 barrels daily production for the field is probable in the early autumn months.

TULSA, June 14.—Edward Brantley and party have left for Venezuela to do geological work for the Atlantic Refining Co.



A view of the Dutch island of Curacao, where the Shell interests have a refinery operating on Venezuelan crude. Note the Dutch roofs, a striking contrast to the flat ones generally found in tropical countries.

Archer County Wildcats And Well In Electra Pool Lead North Texas

FORT WORTH, June 16. FEWER completions than for several weeks, the first tangible evidence that drilling operations have been retarded by the cuts in crude, are shown from North and Central Texas during the past week, but production figures from the same district show a daily gain of about 3000 barrels. Burkburnett and the Ranger territory are responsible for the largest gains, this being due to working over old wells, rather than completion of new. Archer county this week shows its normal gain of several hundred barrels in daily average, now producing 17,740 barrels daily.

Completion of two new wildcats in Archer county for good producers indicating probability of two more pools like those which have been responsible for jumping Archer county's production rapidly, divided honors with Electra's first "real well" in the 2200-foot lime, for feature place in this week's events in the north part of the district.

The Sweatt well on the Wilmot, a mile northeast of the Peterson pool got the sand at 1600 feet two weeks ago. It was put on the pump early in the week, making around 90 barrels. The rods and tubing were pulled to clean out and the well started flowing. It is now rated a 150-barrel producer.

Three miles southeast of the Panther pool, the original Archer county producing area, the No. 2 White of Day and Taylor is a successful completion in the 1440-foot sand. It made a 75-barrel pumper.

Texas Fields' Daily Estimated Production

	June 16	June 9
Mexia-Currie	61,400	61,200
Powell	8,550	6,100
Wichita Falls Dist.	73,610	71,580
Ranger, lime	52,260	53,970
Ranger, sand, inc. Young county	14,250	13,195
San Antonio, Luling, Mirando	7,300	*3,500
Coastal Texas	85,770	89,027
Coastal Louisiana	7,355	7,495
	310,495	306,067

*San Antonio only.

New tests are already under way in both these newly opened areas.

The new 2,200-foot well at Electra is The Texas Co.'s No. 271 Waggoner, which came in flowing at the rate of 500 barrels daily. This new well is in the extension pool southwest of the town of Electra that is usually known as the Rio Bravo pool. This is the first well in the 220-foot level to make more than 100 barrels, and is considered of much importance.

In Palo Pinto county the 1500-foot pay of the Strawn pool is reported extended a mile eastward by the Texas Pacific Coal & Oil Co.'s No. 6 J. H. Robinson, which is making 100 barrels from five feet of sand. The new well is three miles east of the main Stuart pool, and a mile from present production.

One of the most interesting outside completions in Stephens county in some time is the Magnolia Petroleum Co.'s No. 1 George, about four miles west, and a little south of the Curry pool, and more than a mile from the nearest wells, The Texas Co.'s producers on the Fite and Higginbotham tracts.

The new Magnolia well is reported making around 300 barrels from 3540 feet.

In north Stephens county, about a mile south of Ivan where drilling has not been particularly active for some time, the Texas Consolidated's No. 4 Martin is showing for a nice producer at 3930 feet. Drilled one foot in the well was producing at the rate of 400 barrels daily.

After completing several wells that were heavy gassers but only light oil producers, the Landreth Co. this week brought in its No. 8 Poindexter in the 3600-foot pay for a 500-barrel producer. The well was shot with 110 quarts before completing. The No. 7, same lease, made a small pumper, and is making eight million feet of gas.

New Plant To Build Higher

WICHITA, KAN., June 16.—A million dollars more is to be added to the expense of constructing the big refinery plant of the Roxana Petroleum Corp. in Arkansas City due to the inundation of the site during the recent high waters.

Superintendent More, in charge of construction, has been instructed by the company officials to take precautions against another flood and will raise the foundation three feet higher than had been originally planned.

Completions North-Central Texas Fields Week Ending June 16

WICHITA FALLS DISTRICT

Burkburnett

Company	Well No.	Lease	Depth	Prodction
Staley, Wynne & Fowler	9	W. T. Cropper	1250	10
Hirschi Pool				
Barkley & Meadows	11	Hirschi	1860	275
Gulf Production	6	E. A. Dale	1880	185
Sunshine Hill				
Fort Dearborn Oil Co	12	Eads	865	15
Bladwin Brothers	10	Langford	970	15
Electra				
Texhoma Oil & Refining	4	Waggoner-F	1500	150
Texhoma Oil & Refining	8	Waggoner-E	1800	100
Carter & Yates	1	Burnett et al-A	690	25
J. W. Solly	2	Douglas	2080	Aband.
Trinity Production Co	9	Burnett et al	480	7
Humble Oil & Refining	6	Waggoner-B	1950	150
The Texas Co	271	Waggoner	2190	500
The Texas Co	230	Waggoner	2170	junked
The Texas Co	266	Waggoner	2195	Aband.
M. & V. Oil Co	1	Douglas	1070	Aband.
Wakefield et al	1	Waggoner	1690	Aband.
Davenport & Morgan	1	Fisher	1030	temp. aband.
Clay County-Petrolia Old Pool				
The Texas Co	15	Martin	940	50
Archer County-Freeman-Hampton				
Simms Oil Co	3	Ferguson-A	1770	125
Laning & Moninger	1	Kemp & Kell	2000	Aband.
Staley & Wynne	3	Kemp & Kempner	1760	125
Iowa Park Producing & Refining	6	Ferguson	1765	100
Texhoma Oil & Refining	4	Zane-Cetti	1780	100
Texhoma Oil & Refining	3	Zane-Cetti	1790	Aband.
Texhoma Oil & Refining	10	Ferguson-E	1770	85
Texhoma Oil & Refining	13	Ferguson-E	1770	125
Sunshine State Oil & Ref	10	Ferguson	1735	85
White Oil Corp	8	Kemp & Kempner	1730	160
Tidal Oil Co	6	Ferguson	1750	60
Tidal Oil Co	9	Ferguson	1770	Aband.
American Refining Co	3	Kemp & Kempner	1750	125
Archer County—Langford Pool				
W. S. Langford	3	Kemp & Kempner	1800	Aband.
Archer County—Peterston Pool				
J. E. Parker et al	1	Wilson-B	1580	initial production at rate 500 bbls. settled about 150.
McCarty Oil Co	6	Wilson-B	1590	60
McCarty Oil Co	7	Wilson	1590	30
American Refining Co	2	Hull	1570	200
Oil Investment Co	1	Wilson-D	1595	80
Oil Investment Co	1	Wilson-B	1600	Aband.
Petroleum Producers	2	Wilson-A	1580	75

Archer County—Wildcat

Company	Well No.	Lease	Depth	Production
Day & Taylor	2	White	1450	75
Hack Abernathy	1	Wilson	2030	Aband.
Whitney et al	1	Andrews	1800	Aband.
Montague County				
Tidal Oil Co	1	Hundley	3140	Aband.
Comet Petroleum	1	Cook	1000	junked

GENERAL RANGER TERRITORY

Palo Pinto County

Texas Pacific Coal & Oil Co	6	J. H. Robinson	1500	100
Andrews & McFarland	1	Harris	750	temp. aband.
McGuire et al	1	Carter	1780	10 oil, 20 bbl. water.
Tibbetts, Johnson & Ashburn	1	Weldon	1200	temp. aband.
Buffalo-Brazos Oil Co	1	Dalton	1150	temp. aband.
Dalton Oil & Gas	1	Dalton	3560	temp. aband.
Johnson et al	1	Howard	2650	temp. aband.

Stephens County

Magnolia Petroleum	1	George	3540	300
Texas Consolidated	4	Martin	3930	400
Scott & Bateman	2	Brown	3260	125 bbls., shot 40 qts.
Swensondale Oil Co	27	Swenson	1830	175 bbls., shot 20 qts.
Hagaman et al	6	Hagaman	3240	40 bbls., shot 45 qts.
Prairie Oil & Gas	7	Veale-C	3230	80 bbls., shot 100 qts.
Sun Oil Co	3	Haddon Stoker	3285	2,500 bbls. oil and (drilled deeper) 1,000 bbls. water
Pennok Oil Co	4	Jones	3160	50
Shackleford County				
Landreth & Co	8	Poindexter	3600	500 bbls. shot 110qts
Landreth & Co	7	Poindexter	3550	8 m. gas, 40 bbls. oil, shot 160 qts.
Scott & Witt	1	Trueheart	3620	Aband.
Eastland County				
Todd et al	3	Bobo	1720	30
Mid Kansas Oil & Gas	3	Anderson-Foote	2900	30 bbls., shot 100 qts.
Texas Pacific Coal & Oil	25	Butler	3470	40 bbls., shot 20 qts.
Perkins et al	1	Bobo	1725	40 bbls., shot 20 qts.
James Haynes	1	Whitten	3070	temp. aband.
Parker County				
Capitol Petroleum	1	McFarland	1500	temp. aband.
Brown County				
New Domain Oil & Gas	1	Newton	1400	Aband.
New Domain Oil & Gas	2	Newton	1380	Aband.
Navarro County				
U. S. Tex Oil Corp	1	Burke	2860	3000

Cut In Price And Proration Of Oil Runs Still Looked For In Mid-Continent

Staff Special

TULSA, June 16

THE past week has seen no improvement in the general crude oil situation in the Mid-Continent field, and in fact, prospects look worse, if such a thing is possible, than they did last week. So far nothing has come of the Prairie's warning to producers that a proration of runs was imminent—but neither has there appeared any improvement of conditions which would tend to indicate that that dire step has become any the less imminent.

Production showed a small decline last week, in Oklahoma, but it was very small when compared to the state's total, and was due only to the decline of the big well at Hewitt. Tonkawa fell off about 120 barrels, but Burbank gained 5500 barrels and the state's output is still more than 530,000 barrels a day.

If the Prairie had reached its limit last week, and had more oil than it could say grace over, it certainly has no less now, unless the floods of the past week served to lessen somewhat the flow of crude into its lines. This would be but a temporary phase, and would have no more than a passing effect on the situation. Recent figures sent out by the Prairie giving its shipments for May showed a large falling off as compared with April, or with any of the preceding five months, but during May and so far in June, the Prairie's runs from producing properties have been the largest in the company's history.

It would not be surprising now to see crude cut again, as well as a proration of runs. The flood of oil being produced in Oklahoma shows no signs of diminishing, and neither are there any signs of other buying agencies than the Prairie getting into the market for crude. On the contrary, there is now on foot a movement among refiners to curtail their runs still further. There is talk of reaching an agreement with producers by which they will permit the refiners to do this, with the idea in mind that the producer will be able to find some way to care for this oil. To a great many producers, unable or unwilling to store crude, this will mean simply selling it to some other company, and that in turn means that it will be tendered to the Prairie.

The Prairie now has practically all the oil relinquished by Independent refiners who have had to shut down or curtail operations lately, and has announced that it has all the oil—and more—than it can comfortably handle. Another 10 per cent cut in runs by refiners would mean that practically every barrel so relinquished would be offered the Prairie, and it does not require a slide rule to figure what the result would be. The refiners, however, would not be at all sorry to see crude cut again, and it looks now as if they will see it.

Hard Sledding for Producer

What is the producer to do under the circumstances? He has practically only one buyer to whom he can turn with any hope of selling his oil, and with every barrel he tenders that purchaser he brings closer further reductions in price and that bugbear of all producers, a proration of runs. In a great many cases, the producer has to sell his oil, no matter what the price, as he is dependent upon that source of income, and also in many cases he would be unable to finance a storage program even if he did not have to sell his oil. This type of producer is always more or less at the mercy of conditions—but when it comes to the point where his runs are prorated and he can sell only a portion of his oil, he is up against it properly.

As far as his present production is concerned, then, there isn't much that he can do except to grin and bear it and hope for the best. But, if he will look a little ahead, and get his mind off his present troubles, he will see that there is something he can do that will help him out of the present slough of despond, and will tend to make it of only comparatively short duration. He can resolutely refuse to drill a single well where it could be avoided, and to produce a single barrel of unnecessary oil. If there ever was a time when unnecessary drilling should be stopped, that time is right now.

Drilling reports were less interesting last week than flood reports; instead of a hole full of water here and there, we had the whole country full of water, and scouts, instead of reporting depths of wells, turned in tickets giving depths of water over the wells. The crown blocks of most derricks were still visible even when the flood was at its worst, and here and there a smokestack of a boiler house or pump station could be seen. Many companies were considering equipping their field Fords with propellers and rudders, but the waters began to recede before these plans could be put into effect. Scouts hereafter will carry Evinrudes in the back end for emergency use.

On account of the submerged condition of most of the fields, very little activity was in evidence, as it was impossible to do any work, and hauling material was out of the question. The week's list of completions, however, shows a surprisingly large number of wells, but many of these were brought in last week or before, and had not been previously reported on account of weather conditions, which had been bad for some time before the flood came as a grand climax.

In Oklahoma, during the week just closed, 141 wells were completed, of which 101 were oil wells, nine were gas wells and 31 were dry holes. This is an increase over last week's figures, which wre 136 total completions, divided 103 oil wells, 13 gas wells, and 20 dry holes. The 101 oil wells completed this week had a total initial production of 52,294 barrels, an average per well of 517.8 barrels. Last week, 103 oil wells brought in 36,464 barrels of new production, averaging 354 barrels per well. The nine gas wells reported this week had a total initial volume of 138 million cubic feet.

Completions reported from Kansas this week totaled 28, of which 21 were oil wells, one was a gas well, and six were dry holes. This compares with last week's figures of 32 total completions, divided 23 oil wells and nine dry holes. The 21 oil wells brought in this week had a total initial production of 1230 barrels, an average of 56 barrels per well.

Oklahoma and Kansas Estimated Daily Average Production

	June 16	June 9
Oklahoma:		
Bristow	62,000	64,250
Burbank	115,780	110,245
Cushing	28,500	28,700
Healdton	17,300	17,475
Hewitt	33,600	37,500
Tonkawa	111,890	112,010
Osage, except Burbank	34,500	34,650
Oklahoma, general	127,350	127,500
Total	530,920	532,330
Decrease		1,410
Kansas:		
Augusta-Douglass	4,475	4,500
Blankenship District	4,550	4,600
Elbing-Peabody	12,300	12,300
El Dorado	19,100	19,200
Florence District	5.500	5,600
Fox-Bush	8,375	8,400
Greenwood County	14,800	15,000
Leon & Weaver	1,950	2,000
Kansas, general	12,775	12,875
Total	83,825	84,475
Decrease		650

Southern Oklahoma

The big well of the Carter Oil Co.—Southwestern Petroleum Co. in the Hewitt field is still producing 6000 barrels daily, and it is believed that it would make considerably more than that if it had not been necessary to pinch it in following the appearance of water in the early part of the week. This water is believed to be coming from above, as a salt water sand was passed through at about 2500 feet, and was not cemented off. The pressure of the flowing oil was sufficient to hold this water off for two weeks, but it finally made its appearance and may in the end ruin this wonderful well.

Eight new operations in the vicinity of the big well have started up since it came in, all bound for the deep pay. Skelly Oil Co., which has the offset to the Carter well, is in such a hurry to get to the deep level that it is deepening one producing well and has started a new test as a twin to it, so that whichever one reaches the deep sand first will be the well. It will be interesting to see if the rotary on the new well will be able to get down 2940 feet before the cable tools in the deepening well negotiate the 550 feet it has to go.

Cable tool drilling in the Hewitt field is slow and full of delays and troubles, due to frequent cleaning out and caving holes, together with numerous water sands. The rotary, on the other hand, surmounts all these difficulties and makes good time until the hard formations are encountered. The Skelly rotary well mentioned has made 1300 feet in little more than a week, and at that rate will be down to the deep level in less than three weeks from the time it started.

Kay County

The well of the Ostot Development Co., in 16-27-1W, Kay county, which was

(Continued on page 79)

Completions In Oklahoma And Kansas Week Ended June 16, 1923

OKLAHOMA

Beckham County

Company	Well No.	Location	Depth	Initial Production
Petroleum Exploration Co.	1	SE NW 31-9n-23w	2956–2963	218

Caddo County

Company	Well No.	Location	Depth	Initial Production
English Drilling Co.	1	SWc NE 11-5n-9w	2350–2410	90
Rucker et al.	1	NE SE 24-7n-9w	T.D.3190 O.W.D.	Dry

Carter County

Company	Well No.	Location	Depth	Initial Production
Wirt Franklin	1	NE NE 25-2s-3w	2207–2236	356
Humble Oil & Ref. Co.	5	NE SE 9-4s-2w	1945–1992 O.W.D.	75
Cotton Belt Oil Co.	9	NW NW 15-4s-2w	2383–2425	85
Gates Oil Co.	10	SE NW 15-4s-2w	2128–2245	50
Amerada Pet. Corp.	9	SW NE 20-5s-1e	1486–1500	7M
Amerada	3	SE SE 20-5s-1e	1365–1460	30

Creek County

Company	Well No.	Location	Depth	Initial Production
Carter Oil Co.	3	SEc SW 16-16-9	2968–2970	1800
Roxana Pet. Corp.	2	NE SW 16-16-9	2960–2979	700
White Eagle Oil & Ref. Co.	3	NW SE 16-16-9	2981–2988	200
Nowata Oil & Ref. Co.	2	NE NW 21-16-9	2993–3001	250
Jackson & Wise	1	NE NW 21-16-9	2931–2971	420
H. F. Wilcox O. & G.	9	SE NW 2-15-8	3122–3144	540
Texas Co.	3	NW SE 5-15-8	3229–3232	995
W. E. Brown Oil Co.	1	NWc 1-15-9	2906–2940	15
Phillips Pet. Co.	3	NW SW 4-15-9	2895–2899	2660
H. F. Wilcox	3	SE SE 32-15-10	3223–3226	20
H. F. Wilcox	7	SE SW 33-15-10	3251–3268	1000
Cosden Oil & Gas	1	NW NW 34-15-10	T.D.3190	Dry
Westland Oil Co.	1	SWc SE 30-17n-9e	T.D.3492	Dry
Wilcox Oil & Gas Co.	3	SE SW 35-16-8	3072–3095	2000
Shaffer Oil & Ref. Co.	2	SE SE 10-14-8	2451–2502	30
Roxana Pet. Corp.	1	NEc SW 30-14-8	3381–3407	160
Independent Oil & Gas	1	NWc SE 32-14-8	2309–2335	40
C. G. Tibbens	1	SWc 7-14-9	2309–2330	40
Skelly Oil Co.	4	NW NW 4-14-10	3231–3244	750
Charles Page	23	SW NW 4-18-7	2572–2626	50

Garvin County

Company	Well No.	Location	Depth	Initial Production
Magnolia Pet. Co.	3	NE SE 9-1n-3w	1575–1592	100
Texas P.C. & Oil Co.	6	SE SE 9-1n-3w	1566–1584	100
Magnolia Pet. Co.	20	SW NE 15-1n-3w	1492–1515	40

Grady County

Company	Well No.	Location	Depth	Initial Production
Marland et al.	1	NE SE 17-4n-6w	1952–1996	15M
New Moon Oil Co.	1	SW NE 11-4n-8w	T.D.1442	Dry

Hughes County

Company	Well No.	Location	Depth	Initial Production
Tidal-Osage Oil Co.	1	NWc SW 4-9-10	3293–3323	35
Diamond & Wilmont	1	SE 36-8-8	T.D.3400	Dry
Prairie Oil & Gas	3	5-9-10	T.D.3325	Dry

Kay County

Company	Well No.	Location	Depth	Initial Production
McMann Oil Co.	1	SWc SE 27-25-1w	2517–2521	1847
Blackwell O. & G. Co.	7	SE NE 34-25-1w	1969–1987	200
Amerada Pet. Corp.	11	SW NE 34-25-1w	2393–2515	3235
Amerada	16	NW NE 34-25-1w	2439–2532	3203
Amerada	19	SW NE 34-25-1w	1795–1803	275
Amerada	23	SW NE 34-25-1w	1945–1986	200
Comar Oil Co.	4	NW SE 34-25-1w	2130–2133	840
Comar	5-B	NE SE 34-25-1w	1781–1825	150
Pennok Oil Co.	8	SE SE 34-25-1w	2440–2530	300
McCaskey & Wentz	26	NE SW 34-25-1w	1808–1835	15
McCaskey & Wentz	27	NE SW 34-25-1w	2465–2540	3688
T. B. Slick & Comar	7-C	SW SW 35-25-1w	1781–1852	800
Carter Oil Co.	9	SW NW 35-25-1w	2168–2203	200
Comar Oil Co.	3-A	NE SW 35-25-1w	1800–1805	490

Noble County

Company	Well No.	Location	Depth	Initial Production
Gypsy Oil Co.	30	NE NW 2-24-1w	2154–2180	600
Gypsy	34	NE NW 2-24-1w	2420–2471	400
Gypsy	37	NE NW 2-24-1w	1789–1815	1000
Gypsy	38	NE NW 2-24-1w	1795–1830	495
Gypsy	42	SEc NW 2-24-1w	1965–2000	250
Comar Oil Co.	1-A	NWc SE 2-24-1w	1955–2002	1594
Comar	2	SWc SE 2-24-1w	2049–2064	483
Comar	8-A	SWc NE 2-24-1w	1951–2030	464
Blackwell O. & G. Co.	4-B	NEc NW 3-24-1w	2185–2193	100
Comar	14-B	CEL 3-24-1w	1860–1881	310
Comar	1	NWc NE 11-24-1w	1066–2086	713
Healdton O. & G. Co.	6-A	NW NW 11-24-1w	2612–2635	1345

Okfuskee County

Company	Well No.	Location	Depth	Initial Production
Scott & Levy	3	NW SE 4-12-11	T.D.2657	Dry
Gypsy	1	NW SW 6-10-10	3110–3118	10M
Minnehoma Oil Co.	1	NE SW 16-10-11	3126–3131	40 and 10M
Texas Co.	1	NWc NE 36-10-11	3081–3092	50
Floyd C. Howard O. & G. Co.	1	NWc 10-12-8e	T.D.4260	Dry
Josey Oil Co.	1	NW SW	T.D.3015	Dry
Gypsy	3	NE SE 13-11-11	T.D.2815 O.W.D.	Dry
Empire Gas & Fuel Co.	1	NE NE 31-11-10	T.D.3873	Dry

Okmulgee County

Company	Well No.	Location	Depth	Initial Production
Transcontinental Oil Co.	12	NWc SW 10-15-11	2133–2163	60
Denver P. & R. Co.	5	NW NE 31-13-11	2549–2574	40
Ranger-Gulf Corp.	6	SWc SE 30-15-11	2133–2163	60
W. B. Pine	1	NE NW 11-14-13	1840–1865	10M
Gladys Belle Oil Co.	4	SW SE 36-13-11	2508–2545	300
Barbara Oil Co.	1	SWc NW 26-12-12	2427–2514	12M
Butler Bros.	4	SE NE 33-12-12	1440–1496	300
Detter & Smith et al.	1-A	SE SW 32-16n-12e	T.D.2252	Dry
McCullough et al.	2	SW SE 2-14-13	T.D.2035	Dry
Sheldon & Houston	2	NWc NE 17-13-12	T.D.3060 O.W.D.	Dry
E. J. Lambert Oil & Gas Co.	1	SW SE 2-14-13	T.D.2035	Dry
Independent O. & G. Co.	4	SW NW 7-11-12	T.D.2826	Dry
Sheridan Oil Co.	1	SWc 34-16-12	2174–2176	8M

OKLAHOMA

Osage County

Company	Well No.	Location	Depth	Initial Production
Presbury Munnicutt	2	SW NE 17-27-10	1251–1265	10
Superior Oil Co.	1	SE NE 16-29-12	931–935	12
Peters Oil Co.	1	NW SE 22-27-11	T. D. 2182	Dry
Finance Oil Co.	2	SE SW 7-22-11	T. D. 1908	Dry
Sheeters Peters	9	SW SW 33-23-12	T. D. 1757	Dry
Indian T. I. O. Co.	313	NE 32-25-12	T. D. 1875	Dry
Tuloma Oil Co.	17	SE NE 10-27-10	T. D. 1343	Dry
Evidence Oil Co.	2	SE NW 22-28-10	T. D. 1257	Dry
Owen Osage Oil & Gas Co.	1	SWc NE 17-29-12	T. D. 1710	Dry
Clem McCoy	11	NWc SW 25-23-10	1725–1763	150
Rex Pyramid Oil Co.	5	SE NE 26-23-10	1759–1795	8
Rex Pyramid	6	SE NE 26-23-10	1728–1763	60
C. B. Peters	3	CSL NW 33-24-9	1480–1518	25
Plains Pet. Co.	4	NE NE 33-24-10	1378–1398	40
Peters Oil Co.	6	SEc NW 34-24-10	1147–1165	3
Peters Oil Co.	7	NWc 34-24-10	1343–1358	20
Homaokla Oil Co.	6	NEc SE 30-24-11	1050–1064	48M
C. B. Peters & Finance Oil Co.	13	CWL NE 23-25-9	2002–2095	10
I. T. I. O. Co.	35	SW NW 36-25-9	2002–2096	150
Devonion Oil Co.	2	NW SE 27-25-11e	1726–1735	4
Peters Oil Corp.	7	SW NE 6-22-9e	2550–2632	30
Lewis Oil Co.	4	SE SW 36-22-11	2291–2306	25
Chas. B. Peters	30	SE NW 13-23-8e	2906–2915	35

Osage—Burbank District

Company	Well No.	Location	Depth	Initial Production
Carter Oil Co.	16	SW SE 8-26-6	2775–2832	87
Gypsy Oil Co.	4	SWc NW 24-27-5	2958–3014	2500
Gypsy	7	SW NW 24-27-5	2952–3014	3600
Gypsy	8	SW NW 24-27-5	2962–3028	1920
Gypsy	11	NW NW 24-27-5	2958–3022	3600
Gypsy	12	NW NW 24-27-5	2968–3022	2175
Gypsy	15	NW NW 24-27-5	2957–3010	75
Phillips-Skelly	13	SW NE 25-27-5	2919–2962	35
Phillips Pet. Co.	10	SW NE 35-27-5	2935–2972	200
Twin State Oil Co.	9	SW NW 36-27-5	2926–2978	400

Pawnee County

Company	Well No.	Location	Depth	Initial Production
Magnolia Pet. Co.	3	SE NE 21-20-6e	2454–2465	80
Moorey et al.	1	NWc SW 8-20-10	630–750	10

Payne County

Company	Well No.	Location	Depth	Initial Production
Hale & Cassidy	7	SEc 30-18n-5e	T. D. 3504 O.W.D.	Dry

Pontotoc County

Company	Well No.	Location	Depth	Initial Production
Smith & Lee	1	SE NE 3-4n-7e	1095–1110	10
Canadian Pet. Co.	1	SEc 16-4n-6e	T. D. 2516	Dry

Stephens County

Company	Well No.	Location	Depth	Initial Production
Jock Barnes	3	SE SW 2-1n-5w	1288–1298	60
Lone Star Gas Co.	3	NE SW 9-2s-6w	T. D. 2960	16M
Carter Oil Co.	3	SEc SW 6-2s-4w	548–560	4
Acco Oil Co.	1	NW SE 3-2n-4w	T. D. 2502	Dry
Watt Oil Co.	1	NWc NE 32-2n-4w	T. D. 1501	Dry
Magnolia	7	NE NE 12-2s-5w	T. D. 1765	Dry

Tulsa County

Company	Well No.	Location	Depth	Initial Production
Lea Drilling Co.	4	SW SW 4-18-13	1383–1400	5
Sparks et al.	2	SW SW 16-18-13	1139–1200	25
West et al.	2	SE NW 12-18-12	1802–1812	2M
Webber & Taylor	1	NWc NE 3-16-12	1473–1488	15
Thompson & Black	1	NE SW 2-18n-13e	T. D. 2172	Dry
Livingston Oil Co.	13	NW 6-17-13e	T. D. 2565	Dry

Wagoner County

Company	Well No.	Location	Depth	Initial Production
Jones Oil & Gas Co.	2	NE SE 4-16-15	1116–1125	15

KANSAS

Butler County

Company	Well No.	Location	Depth	Initial Production
Hyson & Whitman	1	SE SW 14-29-4e	T. D. 3003	Dry
Crawford et al.	5	NE SE 36-24-3e	2674–2690	70
Oliphant Pet. Co.	10	SW SE 9-26-8e	2528–2541	35
Lewis Oil Co.	21	SE NE 36-29-5e	2753–2811	30
Lewis Oil Co.	22	SEc NE 36-29-5e	2737–2799	50

Cowley County

Company	Well No.	Location	Depth	Initial Production
Derby Oil Co.	4	NW SE 25-32-4e	1488–1499	10
Price et al.	2	SE NW 36-32-4e	1479–1484	60
Torrance et al.	1	SW NW 25-32-4e	T. D. 1500	Dry

Elk County

Company	Well No.	Location	Depth	Initial Production
A. G. Dana et al.	1	SWc 13-30-8e	1749–1754	7M

Greenwood County

Company	Well No.	Location	Depth	Initial Production
Braden Bros.	2	SW NE 34-22-13	T. D. 1910	Dry
Parkins	1	SEc NW 26-23-9	T. D. 2444	Dry
Tidal Oil Co.	1	SEc SW 22-22-11e	1940–1957	40
J. H. Milliken	1	SWc SE 22-22-11e	1936–1964	10
National Ref. Co.	6	NW NE 27-22-11e	1919–1934	50
York State Oil Co.	2	SW SE 32-22-11e	1910–1959	100
R. G. Jennings	1	NWc SE 33-22-11e	1922–1948	75
R. G. Gillespie	3	SW SW 27-22-13e	1895–1903	10
Darby et al.	4	NWc 34-22-13e	1865–1883	15
Theta Oil Co.	7	SW SE 34-22-13e	1825–1840	25
Mission Oil Co.	1	SEc 22-23-10e	2244–2331	10
Mid-Kansas Oil &Gas Co.	11	NEc SE 23-23-10	2054–2123	150
Waite Phillips & Roth	1	SEc NE 29-23-10	2350–2384	40
Empire Gas & Fuel Co.	1	SEc SW 29-23-10	2284–2338	150
Phillips Pet. Co.	2	NE NW 32-23-10	2238–2315	175
Fisher, Lauck, & Moore	5	NW NW 5-23-11e	1984–2001	25
Tidal Oil Co.	4	NW NE 5-23-11e	1915–1975	100
Connell Pet. Co.	1	NWc SE 14-25-10	T. D. 2503	Dry
Selby Oil & Gas Co.	6	SW SE 6-21-11e	T. D. 1140	Dry

Smackover Has Another Big Week, With 62,000 Barrels New Output

By Special Correspondent

SHREVEPORT, June 16

SIXTY-SIX completions, of which three were gassers, 11 failures and 52 producers with combined initial production 66,000 barrels, was the record in the Shreveport territory, including southern Arkansas, during the week just closed. There were five more producers and 40,905 barrels more initial yield than during the previous week, when the record for the Shreveport territory showed 43 producers, combined initial yield 25,095 barrels, 13 failures and five gassers, a total of 61 completions.

Daily average production during the week just ended totaled 223,346 barrels, which was a gain of 39,474 for the seven days. The bulk of the gain was in Smackover, which also showed a large part of the gain in the initial production.

According to reports in oil circles here, operators in the Smackover field during the coming week probably will consider whether operations in that district shall be suspended due to the new low price of oil as has been done in some of the other Mid-Continent fields. To the present date there has been no noticeable curtailment of drilling activity although there has been a small decline in the number of new locations lately, it appears.

Among the features of the week just closed was the record of the Bellevue shallow field of Bossier parish, which is listed in the completions report with four producers yielding 515 barrels, compared with a failure reported the previous week. In addition to the four producers listed in the completions report, another Bellevue producer has been reported, namely, the Gulf Refining Co's. Bliss A-16, in 15-19-11, at 375 feet, 55 barrels. This well is not included in the total given in the completions record for the week.

In Caddo parish there were two failures and one 20-barrel producer during the week, compared with a record of two small producers, total yield 25 barrels, the week before.

Webster parish got into the completions column with a gasser, compared with no completions the previous week.

In De Soto parish the lone completion was a 60-barrel producer, the Fortuna Oil Co's. Pugh No. 57 in 12-12-11 at 2745 feet, compared with none the previous week.

Morehouse, in northeastern Louisiana, recorded one gasser, the same as the week before, but Ouachita had none to its credit.

East, Texas, had only one completion, in Panola county, being the L. Werner No. 7 of H. S. Morris, trustee, on the B. C. Jordan headright, at 1975 feet, a gasser, 25 million cubic feet.

Stephens, Arkansas, reported four producers, yields totaling 110 barrels, compared with 11 completions, including two failures and nine producers, yield 490 barrels, the week before.

El Dorado, Arkansas, reported four failures and six producers, yielding 3095 barrels, compared with the previous week's record of three failures.

In Smackover, Arkansas, the record showed big improvement, there having been five failures and 36 producers, yielding 62,200 barrels, compared with the previous week's record of six failures, two gassers and 31 producers yielding 24,530 barrels.

Four of the Smackover producers had 5000 barrels or more initial yield, the largest completion being Crawford & Sebastian's Giller No. 1 in 14-16-15 at 2000 feet, initial yield 7,000 barrels.

Completions In North Louisiana And Arkansas Week Ended June 15

LOUISIANA

Webster

Company	Well	Location	Depth	Yield
Fortuna Oil Co	Baker No. 2	35-23-11	2675	35 m. gas

Caddo Parish

Gannt & Fagan	Barr No. 1	30-22-15	3004	dry aband.
Dixie Oil Co	Robertshaw No. 52	14-21-15	1585	20
Ark. Nat. Gas Co	Ardis & Lay No. 329	6-21-14	2445	junked aband.

Bossier-Bellevue

R. O. Roy	Scandland No. 11	15-19-11	375	50
Gulf Refining Co	Bliss et al A-15	15-19-11	360	30
Standard Oil Co	Kendricks A-4	23-19-11	300	35
Standard Oil Co	Kendricks A-6	22-19-11	302	400

DeSoto Parish

Fortuna Oil Co	Pugh No. 57	12-12-11	2745	60

Morehouse Parish

Ladell et al	Fee No. 8	34-20-5E	2235	45 m. gas

TEXAS

Panola County

H. S. Morris, trustee	L. Werner No. 7	B. C. Jordan H.R.S.	1975	25 m. gas

ARKANSAS

Stephens

Magnolia Pet. Co	Rhinehart No. 1	20-15-19	2170	20
Gulf Refining Co	Lena Grayson No. 1	19-15-19	2120	50
Standard Oil Co	Weaver No. 1	30-15-19	2110	40
Gulf Ref. Co	Milner No. 3	24-15-10	2134	75

El Dorado

Detroit-Summerfield	Moody No. 6	17-17-14	2165	600
Gulf Refining Co	Park et al No. 5	18-17-14	2148	60
Marion Oil Co	Wesley Chapel No. 1	19-17-14	2185	110
Olvey et al	Polk & Ezell No. 1	18-17-14	2165	2000
Sure Oil Co	Brown No. 5	20-17-14	2170	200
Sure Oil Co	Brown No. 6	20-17-14	2175	125
Nashville C. of C	Doleman No. 1	33- 9-27	1435	dry aband.
Coulter et al	Been No. 1	17- 9-28	1130	dry aband.
Pautz et al	Barfield No. 1	18-10-28	1280	dry aband.
Brookshear et al	Tootle No. 1	2-12-31	1300	dry aband.

Smackover

Cox Oil Co	Burton No. 1	30-15-17	1935	S.W. Aband.
Forrest Oil Co	J. A. Cromer No. 8	27-15-16	2075	500
Forrest Oil Co	Mullens No. 11	27-15-16	2000	25
Harrell et al	Neeley No. 1	22-15-16	2280	dry aband.
Houston Oil Co	Murphy B-1	28-15-15	2025	300
Humble Oil & Ref. Co	Arnold No. 2	25-15-16	2040	25
Peer Oil Co	Mullins No. 3	27-15-16	2060	50
Gulf Refining Co	Ralph Bennett No. 1	33-15-15	2015	20 m. gas 10 oil
Gulf Refining Co	J. H. Alphin No. 2	10-16-15	2006	5000
Gulf Refining Co	Fincehr No. 3	33-15-16	2240	20
Gulf Refining Co	T. C. Goodwin No. 1	16-16-15	2085	2500
Gulf Refining Co	Murphy & Hardy No. 2	4-16-15	2000	15 m. gas 75 oil
Alday Drilling Co	Murphy No. 1	15-16-15	2070	1000
Atlantic O. P. Co	Meakin No. 2	9-16-16	2205	dry aband.
Bement et al	Murphy No. 1	2-16-15	2095	700
Center et al	Morgan No. 2	7-16-15	2020	700
Bob Chew	Lawton No. 2	10-16-15	2084	3000
Crawford & Sebastian	Giller No. 1	14-16-15	2000	7000
Federal Pet. Co	Ballard No. 4	10-16-15	2025	5000
Graves Oil Co	Ballard No. 1	10-16-15	2020	3500
I. B. Heard	Murphy No. 1	15-16-15	2040	1500
Humble O. & R. Co	Pate No. 1	10-16-15	2005	3500
Invaders Oil Co	Oran No. 4	8-16-15	2005	10m. gas, 10 oil
McPherson et al	Edwards No. 1	16-16-15	2065	20m. gas, 10 oil
McPherson et al	Lawton No. 1	10-16-15	2060	20m. gas, 1000 oil
Magnolia Pet. Co	Hegwood No. 2	10-16-15	2674	S. W.aband.
Oil Operators Trust	Ballard No. 1	10-16-15	2005	6000
Page et al	Murphy No. 1	15-16-15	2040	400
Waite Phillips	Pate No. 2	10-16-15	2015	4500
Sure Oil Co	Rhodes No. 1	16-16-15	2085	1000
Sure Oil Co	Rhodes No. 2	16-16-15	2100	600
Sun Oil Co	Gaston No. 1	3-16-16	2295	5m. gas, 200 oil
Tarver et al	Saxon No. 1	3-16-16	2285	500
Texas Oil Co	Graves No. 1	3-16-15	1990	4500
Vitek Oil Co	McClannhan No. 3	6-16-15	1985	75
Federal Pet. Co	E-2	15-16-15	2032	5000
Gulf Ref. Co	J. H. Alphin No. 3	2-16-15	2007	3500
Gulf Ref. Co	Louis Wernes No. 8	6-16-16	2880	150
Gulf Ref. Co	Ralph Bennett No. 1	3-15-15	2020	20m gas, 10 oil
A. & M. Oil Co	Lawton C-1	10-16-15	2030	10m gas, 500 oil
Miller & Winger	Harris No. 1	34-15-15	2000	150
Tennessee Oil & Gas	Tuberville No. 1	17-15-16	2350	S.W. Aband.

SHREVEPORT, June 16.—Daily average production for North Louisiana and Arkansas for the weeks ended June 7 and June 14 was as follows:

Daily average	June 14	June 7
Caddo, light	8,496	8,520
Caddo, heavy	2,760	2,834
Red River-DeSoto	7,015	7,093
Haynesville	30,965	31,250
Homer	10,120	9,968
Bellevue	5,130	6,033
Eldorado	23,840	20,180
Smackover	132,420	95,894
Stephens	2,600	2,095
Total	223,346	183,872
Increase		39,474

CHICAGO, June 13.—Joe S. Adams, special representative of the Wadhams Oil Co., Milwaukee, will be married June 27 to Miss Marjorie Fogle, daughter of O. C. Fogle, Fairfield, Ill. Mr. Adams will live in Milwaukee.

Northwest Colorado In For Play; P. & R. To Build Gasoline Plant

CASPER, June 16

CONSIDERABLE activity is in evidence in Moffat county in the northwestern part of Colorado where the Texas, Midwest and Middle States companies are taking up acreage. The Texas Production Co. has secured a large block of leases on Hamilton dome, 12 miles south of Craig and are moving in with a standard rig and cable tools. The territory has been mapped by geologists of the company and it is stated that four or five possible oil producing sands are expected at a total depth of 4000 ft.

It is stated that the Midwest Refining Co. is also taking up leases on the same structure. A corps of Middle States men are also working out a number of structures in Moffatt county and that they have been mapping Vermillion dome west of Craig. A local syndicate is reported to be drilling on the Morgan dome at Elk Springs west of Craig. There are a number of bituminous coal measures in Moffatt county and it is supposed that there are very good prospects for securing both oil and gas. E. M. Porterfield, a former Wyoming operator is said to have control of a large block of acreage in the locality where the oil leases are being secured.

Producers & Refiners Corp. is reported to have authorized the building of a $2,000,000 gasoline works in the Salt Creek field. After recovering the gasoline from the natural gas from its leases by the absorption process it will be turned into a line and transported to Casper for fuel. This company is now engaged in putting the finishing touches on the doubling of its refinery at Rawlins from 10,000 barrels a day to 20,000 barrels. The Casper division offices were moved from the Midwest building this week to a temporary office building at the company's absorption plant west of Casper.

Hope Engineering & Supply Co. of Mt. Vernon, Ohio, is rushing work on its Wyoming contracts. On the 28 miles of 6-inch pipe line for oil from the Poison Spider field for the Fargo Oil Co., residence camps have been installed, pumps for the initial station are on the ground and pumps are being delivered for the second station. Pipe for the line is being strung along the right-of-way for the line by the White Motor Co. and everything is in readiness for the start of laying the line and ditching on the field end.

In the gas fields of Carbon county, the doubling of the Producers & Refiners 10 in. line from Lost Soldier to Ferris has been completed and everything is in shape to hook on the second big gasser at Camp Wertz whenever it should be needed.

On pipe line for oil which it is laying for the Producers & Refiners from the Salt Creek field to Ferris, the 6-inch pipe has nearly all been strung by the White Motor Co. from the field to Casper and about 16 miles of the pipe has been laid.

Southwestern Petroleum Co. is reported to have a showing of oil on the Medicine Bow structure on the SE¼ 25-21-79, about 10 miles southwest from the town of Medicine Bow in Carbon county. This same company drilled a test south of Saratoga and had a good showing of gas. It is also drilling in the Cook's Gap district.

CASPER, June 16.—Pipe line runs in the Rocky Mountain region for the week ended June 16, showed an increase of 2980 barrels in the daily average when compared with the record of the preceding week. Comparative average daily runs for the two weeks in the various fields follow:

Fields:	June 16	June 9
Salt Creek	94,040	91,600
Teapot	3,800	3,900
Big Muddy	4,150	3,725
Lance Creek	760	795
Pilot Butte	95	90
Lander	230	720
Lost Soldier	3,870	3,535
Rock River	4,250	4,100
Grass Creek	5,275	5,100
Hamilton Dome	470	315
Elk Basin	1,975	2,010
Greybull, etc.	190	260
Osage	1,015	945
Ferris	145	185
Cat Creek	6,680	6,750
Kevin-Sunburst	1,120	965
Miscellaneous	510	600
Total	128,575	125,595

Iowa-Wyoming Oil Co. Benedum & Trees interests and Mark U. Weber have abandoned test on 9-30-81 at Bates Park. Test was drilled to total depth of about 2000 feet. Contractor is now pulling casing.

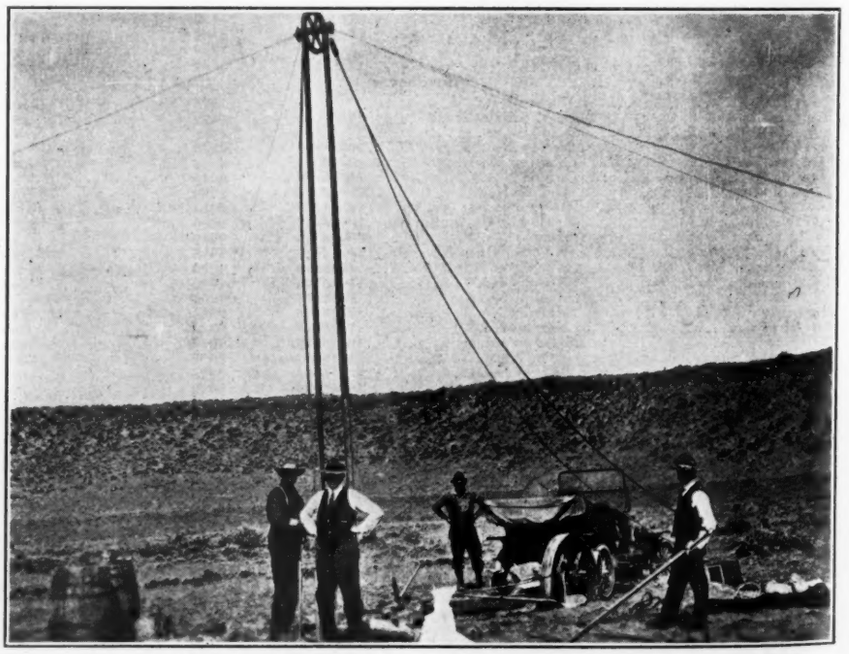
California Oil Co. of Wyoming has indications for a good oil well along with considerable gas in its new well in the Poison Spider on 18-33-82 in the southern part of the field. The new well extends the field about one-half a mile south of a producing well of the New York Oil Co. The Sundance sand was topped at 1395 feet when 10-inch casing was set and cemented. Drilling has been suspended at 1330 feet with about 1000 feet of oil in the hole. There is also a considerable flow of gas, it being estimated that the gas will be sufficient for fuel in drilling and camp use.

The local management of the company estimates that the well will pump from 100 to 150 barrels at the present depth and that the production could be increased by drilling deeper which may be done later as there should be from 60 to 80 ft. of sand in that part of the field. However, it is the intention of the management to play safe with the first well and not endanger it by running into water through deeper drilling so that it will likely be produced at the present depth.

Crawford Visits Casper

CASPER, WYO., June 16.—James C. Crawford, president of the Equitable Petroleum Co. of Denver, was in Casper several days this week on business for the Producers & Refiners Corp. having come direct from California where the North American Oil Consolidated recently completed a 4600-barrel well on a 320-acre lease of the Equitable which is located in Naval Reserve No. 2. The total depth of the well is 3400 feet.

The lease was obtained from the government by Mr. Crawford for his company about a year ago. Mr. Crawford was formerly secretary of the Producers & Refiners Corp. and still represents the company in Washington in special cases. He makes Washington his home, living at the Metropolitan Club. For a number of years he was in the legal department of the Department of Interior and is familiar with all land matters in this branch of the federal government.



Here's the way a lot of "wildcatting" was done in Wyoming. Under the old law, prospectors were compelled to make "discovery" of oil or gas before they obtained title. It is often possible to find a color of oil, at least, under the grass roots and the flivver was often used as a drilling engine.

Decline In Lubricant Crude Supply Holds Up South Texas Field Prices

By Paul Wagner
STAFF REPRESENTATIVE

HOUSTON, June 18

THE strength displayed by Gulf Coastal crude in maintaining its market position in the face of reductions elsewhere over the last few months reflects the peculiarities of the south Texas situation.

A pivot upon which hangs the continued constancy of posted prices at the $1.75 a barrel level is described by analysts as being the level of daily average production. This daily average, which has been hanging around 90,000 barrels daily for months, gives no current promise of being materially increased; in fact, more likely it will show nominal, but steady, declines.

Gulf Coastal Texas production at the 90,000-barrel level is from 10,000 to 15,000 barrels, daily, lower than it was throughout most of 1922. Also, about 30 per cent of the total quantity coming out of the ground classifies as "light gravity" crude, which in lubricant manufacturing practice is non-refinable. This percentage has risen gradually as producing operations were carried steadily to the deeper "light oil" horizons in the last few years.

Although major interests are able to balance their profits on this lighter gravity crude with the normal lubricant stocks because of their running this material to gas oil fractions and cracking the latter into motor fuel, it is only the few larger plants that are equipped for this handling and only then because their installations were built to run the various crudes that find their way into the auxiliary pipe line systems.

It will be apparent from the foregoing that the available quantity of lubricant crude is slowly but surely showing a decline from one producing stage to another; and it is further plain that the Gulf Coastal region has reached a stage where, barring flush discoveries of the future, the south Texas market for crude is more and more based upon the lubricant value of the raw material. Previously, in varying degrees because of changing conditions from time to time, Coastal crude prices often were affected by fuel outlets and inter-related conditions.

From the viewpoint of the major companies, considered as a whole, lubricant requirements are such that the executive heads refer to an "increasing demand" for finished material. This demand they consider will make for a continuance of raw material prices at or above present levels. The only factor they can see that would react downward on Coastal crude prices would be contingent upon fuel and gas oil markets reflecting conditions elsewhere in the country, and especially the Mid-Continent.

Whether this situation would result in a general scaling down of south Texas crude oil prices or whether it would bring about the re-establishment of the "A" and "B" grades of crude, with a differential of 25 cents a barrel between them, is a question upon which no light is currently thrown. Theoretically and without the injection into the situation of phases that can be reckoned with only as they appear, there would, however, seem to be grounds for the assumption that the relatively limited quantity of normal lubricant crude available would work to the end of keeping the Gulf Coastal heavy oil steady in the face of lighter gravity adjustments. Contrary to the situation in the Mid-Continent and elsewhere, it is the heavy napthenic base crude and not the lighter gravity material that is the important grade produced.

Between 55 per cent and 60 per cent of the roundly 90,000 barrels daily average in the Gulf Coastal region of Texas is controlled by four interests as "owned" production. Three of these companies are major interests, who produce, refine and market as well as function as purchasing agencies. The fourth is also a complete unit, except that it is not a purchaser. Together, they account for owned production of approximately 52,000 barrels daily and those who do buy "outside" oil take up slack from others to place some 80-odd per cent of the Gulf Coastal daily average in the hands of the four companies.

Sinclair Oil & Gas Co. and the Sun Oil Co., among other interests whose activities are relatively small in the Gulf Coastal region, do not figure in the price-making fabric of south Texas. This function rests entirely with the Texas Co., the Gulf Production Co., and Humble Oil & Refining Co. interests. The Galena Signal Oil Co. of Texas, which is equipped with both lubricant and cracking still installations, depends almost entirely upon the allied Cullinan companies for its raw material supply.

Humble Oil & Refining Co., with current daily production of roundly 11,500 barrels of south Texas crude, has been drawing upon Gulf Coastal stocks since about the first of the year. Its total withdrawals for the first half of 1923 will amount to roundly 750,000 barrels, so that its position would be one of maintaining rather than disturbing the existing market. In the same period of time, the Gulf interests have stored Coastal crude steadily, the quantity probably amounting to as much as two million barrels in the six months. The Texas Co., which also has been storing, probably has done so at a lower rate of accumulation.

It is known reliably, however, that the Gulf's storage accumulation includes a considerable quantity of lighter gravity Coastal oil from the Goose Creek field and, although a purchaser from "outside sources" the Gulf's accumulation has been largely that of owned production. The Texas Co. is a larger purchaser of "outside" oil, but with it also its owned production predominates. The Gulf's owned production hangs around the 17,650 barrel mark daily and The Texas Co.'s around 16,350 barrels.

These conditions taken into account, analysts of the major companies see no current reason for disturbing existing south Texas price schedules; taking the position that the present rate of viscous oil production is at about the level of consumption.

Since these analysts are the executives upon whose judgment price changes are based from time to time, their reactions to the present Gulf Coastal situation indicate a continued constancy until such time as changes develop with regard to viscous oil demand in relation to available quantities of crude; or the fuel and gas oil situation elsewhere is reflected noticeably in its effects on south Texas.

Stockholders Want An Accounting Of Funds

FORT WORTH, June 16.—Suits for receivership and accounting have been filed in district court here against three oil companies: the Consolidated Producers & Refiners, of which E. C. Kingsberry is named as president; the Exports Refining Co., formerly the Bankers Oil Corp., and the Walker Petroleum Corp. B. B. Walker is named as president of the last two companies. The plaintiffs are: Mrs. S. E. Phipp of Denton county; Mrs. Ella Williams of San Antonio, J. F. Raley of Denton county and N. P. Johnson of Fort Worth. Johnson was a trustee for the Consolidated, which was "merged" with the Walker Petroleum. An accounting, of the result of this merger is asked in the petition.

CASPER, June 16.—John J. Durst of Casper, left Wednesday for Sunburst, Mont., where he has recently put in a warehouse and salesroom under charge of Earl H. Adams. Mr. Durst is district manager for the Oil Well Supply Co.

Gulf Coastal, Texas Completions Week Ending June 16

Company	Lease—Well	Field	Depth	Prod.
Rycade Oil Corp.	State "B" 1	Orange	3895	35 20% B.S. W.
Mutual Oil Co.	Chesson 2	Orange	3150	30 9% B. S. W
Gulf Production Co.	Phoenix 7	Hull	1752	500
Gulf Production Co.	Phoenix 35	Hull	3041	600
Republic Production Co.	Dolbear 63	Hull	1912	300
Republic Production Co.	Dolbear 64	Hull	1247	Aband.
Gulf Production Co.	Stateland Oil Co. 12	Goose Creek	3350	75
Sun Company	B. Smith 13	Goose Creek	1080	60
Humble Oil & Refining Co.	Japhet 31	West Columbia	3727	250
Sinclair Oil & Gas Co.	Jackson 15	Damon Mound	2347	Aband.
Sinclair Oil & Gas Co.	Bryan 29	Damon Mound	2245	5
Sinclair Oil & Gas Co.	Mock 3	Damon Mound	3416	75
Sinclair Oil & Gas Co.	Becker 6	Damon Mound	2934	Aband.
The Texas Co.	Robinson 10	Blue Ridge	3900	3000
Lake View Oil Co.	Hardin 35	Sour Lake	1700	200
Humble Oil & Refining Co.	Singer 4	Palangana (Duval County)	4440	Aband.
The Texas Co.	Theilman 1	Brenham	1868	Aband
Vinton Petroleum Co.	Rescue 1	Vinton, La.		125 35% B.S. W

Among The Producers

LOS ANGELES, June 16. ARTHUR TROUT who was for 15 years superintendent of machine shops for the Shell Co., of California and who was the inventor of the Trout-Butler control head, has left the Shell company and is now general manager of the Emsco Steel Co. Together with Charles Butler and George Rassmussen, Mr. Trout invented a blow-out preventing device which is in general use in California oil fields. He is now in charge of the Emsco plant at Compton, Calif., where steel derricks, calf and bull wheels and other oil fields equipment is made.

* * *

LARAMIE WYO., June 16.—Dr. J. R. Kemp, head of the department of geology, Columbia University, delivered the commencement day address at the University of Wyoming, Laramie, June 13. Dr. Kemp is a geologist of both national and international reputation. He has been secured by the University of Wyoming as a member of the staff of teachers for its summer school of geology which will be in session from June 18 to July 15 and which will spend considerable time in field work.

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GREAT FALLS, MONT., June 16.—A. J. Collier of the U. S. Geological Survey is again engaged in field work in northern Montana. It will be remembered that last season Mr. Collier mapped the Kevin-Sunburst and Bowdoin structures in Montana and the Two Bar and other structures in central Wyoming.

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CASPER, WYO., June 16.—A. A. Rollestone of the Roland Oil Co. of Bristow, Okla., has been spending some time in Casper and Denver investigating oil possibilities in the Rocky Mountain region. Mr. Rollestone has been one of the most successful Independent operators in the Bristow district.

* * *

DENVER, COLO., June 16.—Max W. Ball of Denver left Thursday for Los Angeles, Calif. Mr. Ball is president of the American Association of Petroleum Geologists which will meet in Los Angeles Sept. 20, 21 and 22, and while in Los Angeles will make arrangements for holding the meeting.

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CASPER, WYO., June 16.—A. J. Hull, a geologist of Findlay, Ohio is making a survey of a number of structures in northern Wyoming. In making the trip overland from Laramie to Upton, he had the misfortune to break his arm when he stopped to assist an auto driver in cranking his car.

* * *

TULSA, June 16.—Harold S. Elliott has gone to Tampico for an extended stay in the interests of the Transcontinental Oil Co.

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CASPER, WYO., June 16.—Officials of the Ohio Fuel Oil Co. and the Arkansas Natural Gas Co. have returned east after a tour of Wyoming and Montana oil and gas fields. Those in the party were Fred W. Crawford of Columbus, Ohio; J. R. Munce of Shreveport, La.; Frank S. Mitchell of Beaver Falls, Pa.; W. C. Spooner of Tulsa, Okla.; W. P. Stewart of Dallas, Texas; Warwick M. Dowing of Denver, Colo. and J. J. O'Mahony of Cheyenne, Wyo.

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CASPER, June 16.—H. F. Gerry, petroleum engineer of Denver, Colo., is spending some time in Casper, having returned recently from a trip to Boston. Mr. Gerry made an inspection of the oil possibilities of a part of Alaska last summer.

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CASPER, WYO., June 16.—H. G. Cooke of Salt Lake City spent several days in Casper the past week. Mr. Cooke is president and general manager of the Federal Drilling Co. which is drilling in the Piney field in southern Wyoming.

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CASPER, WYO., June 16.—C. E. Gibson of Paintsville, Ky., has been spending a few days in Casper. Mr. Gibson is connected with the Cumberland Petroleum Co. of Cleveland, Ohio, which has holdings east of the Teapot Dome.

* * *

TULSA, June 14.—Walter Teagle, president of the Standard Oil Co. of New Jersey, and his party, ran into high water near Pawnee while on their way toward Tonkawa, and had to put back in Tulsa harbor to get a fresh start.

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CASPER, June 16.—E. O. Houck of the Comet Oil Syndicate has returned from Ohio having made the trip all the way by automobile. He reports the roads very good in some sections and very bad through Indiana and Illinois.

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TULSA, June 14.—Ralph C. Riley, vice-president of the J. A. Hull Co., spent several days this week looking after his company's interests in the Chickasha gas field and other Grady county developments.

* * *

ARKANSAS CITY, June 16.—The last man to leave the Moore Refining Co's. plant in Arkansas City, Kan., when the flood came was Supt. P. W. Wilkins. He was picked up by a passing boat when wading waist deep. The office of the plant was opened for business Monday morning, as usual, but Tony Buzzi, office man, had to reach it by boat.

* * *

TULSA, June 14.—B. E. Walter, president of the B. E. Walter Oil & Gas Co., and formerly general superintendent for the Producers & Refiners Corp. is drilling several wildcat tests in the northwest part of the state. He has been making his headquarters in Perry lately, but spent the past week in Tulsa, as the floods rendered it impossible for him to get out to any of his wells.

TULSA, June 14.—A. F. Truex has been appointed division geologist for the Humphreys Oil Co., with headquarters in the First National Bank building.

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BARTLESVILLE, June 13.—J. M. Sands, geologist for the Phillips Petroleum Co., has returned from California, where he was sent by his company to make a survey of conditions.

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HOUSTON, June 12.—Donald C. Barton has been appointed chief geologist for the Rycade Oil Corp., the recently organized subsidiary of the Amerada Petroleum Corp.

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CASPER, June 16.—Emil Steiger of Milwaukee, president of the New York Oil Co. and Harry Hynds of Cheyenne, a director in the same company, were in Casper early in the week.

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TULSA, June 14.—H. L. Curry has accepted a position in the geological department of the Shaffer Oil & Refining Co. He formerly had a similar position with the Pure Oil Co.

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TULSA, June 14.— Max A. Pishel, formerly a consulting geologist, has been appointed chief geologist for the Pulaski Oil Co., with headquarters in Tulsa.

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CASPER, June 16.—Frank K. Kistler, chairman of the board and James C. Crawford, attorney for the Producers & Refiners Corp. were in Casper early in the week and made a trip to Salt Creek Wednesday.

* * *

TULSA, June 14.—A. A. Small, W. D. Shedden, and J. A. Pringle, all of whom are drilling wells in Beckham county, were in Tulsa the early part of the week. .

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TULSA, June 16.—J. A. Bearman, Independent producer, who has been at the Mayo hospital in Rochester, Minn., for the past 60 days following an operation, has returned to Tulsa much improved in health.

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CASPER, WYO., June 16.—E. E. Bryner and J. C. Martin of the Emery interests of Bradford, Pa., are in Casper to attend the meeting Monday for the organization of the New Bradford Oil Co. which is represented locally by Claude F. Plummer and I. J. West.

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LOS ANGELES, June 14.—James M. Rust has just been appointed to the position of assistant treasurer of the Union Oil Co., of California, according to an announcement made by R. J. Keown, treasurer. Mr. Rust has been the company's credit manager for five years past. W. C. Trew succeeds Mr. Rust as credit manager for the company. He has been with the Union Oil Co. for 17 years.

* * *

ARDMORE, June 16.—Magnolia Petroleum Co. has purchased the producing properties of Wirt Franklin in the Hewitt field, comprising four tracts totaling 90 acres, with production of 700 barrels daily from 30 wells. The consideration is reported to have been about $980,000. The properties involved are located near the big well recently brought in by the Carter Oil Co.

Sante Fe Springs And Long Beach Hit Up Merry Clip Again

By Special Correspondent

LOS ANGELES, June 14.

IT WAS almost the end of a perfect day. Oil operators who have been endeavoring to curtail production 30 per cent in the Southern California fields, rocked comfortably on their verandas, for it was Sunday, and in five days only about 28,000 barrels had been put on production. Then Santa Fe Springs was heard from.

The Mohawk Oil Co.'s Mutual No. 1 had arrived. It was doing 11,800 barrels. An hour later a fleet-footed messenger again called to say that the Frank Peterson Syndicate's Peterson No. 1 had joined the Mutual, with an initial flow of perhaps 15,000 barrels.

With the frijoles upset by Santa Fe Springs, Long Beach ripped loose the next day and brought in four big wells. When the week's round of performances was summed up the three flush fields which have been making history in the petroleum world for several months, had piled up an initial production of about 74,000 barrels for the week.

The new production list numbers 15 wells, the smallest being about 1500 barrels and the largest being 15,000, with two 12,000 barrel gushers sandwiched in between. The average for the bunch is nearly 5000 barrels apiece, but they will not be permitted to flow at that clip. The figure may perhaps be trimmed back to 35,000 barrels a day.

This on top of a steadily climbing output might be regarded as sufficient to give the operators' executive committee, in charge of production curtailment, a bad attack of cold feet, but S. A. Guiberson, Jr., who is chairman of the committee, declared yesterday that he thought the problem was well under control, and I. W. Fuqua, another member of the committee, expressed the belief that the worst was over.

Keeps Them on Anxious Seat

Both gentlemen admitted that Santa Fe Springs threatens to give the committee some thrills during the next six weeks, because of the large number of deep wells which are practically on the eve of coming in, but it was agreed by both committeemen that the tapering off of production at Huntington Beach and Long Beach, together with the new pipe line and storage facilities which are nearing completion, should be sufficient to average down any spectacular production which the Santa Fe Springs field may undertake to ring in on the committee during June and July. It is expected that the emergency will be passed in August.

Some time during the coming week the committee expects to complete a comprehensive survey of new pipe line and storage facilities now under construction and be able to make some definite announcement as to just how much relief this will afford within a given length of time. The Shell Co. of California, the Pan-American Petroleum Co., the General Petroleum Corp. and the Standard Oil Co., are all rushing work on tank, reservoir and pipe line jobs which should afford millions of barrels of storage between now and October. Much of it may be expected to be finished in August.

Last week, for the first time since the curtailment program was inaugurated, California slid over the 700,000-barrel mark in daily production. The indicator moved up to 730,000 barrels, 15,000 barrels coming from Long Beach, 5000 from Santa Fe Springs and 3000 from Huntington Beach before the record-breaking avalanche of new production came booming in. The result of its arrival will have to be told next week, when the belching gushers have been pinched down as far as possible and their pulse-beat has been recorded by the anxious committee on curtailment.

Production Moves Up

Santa Fe Springs started out the week by resuscitating the Petroleum Midway Corp.'s Mattern 3-I after it had been defunct for three months. Located at the corner of Norwalk and Telegraph Roads, this well originally came in as an 8000-barrel producer. It settled down to 6800, and then, when the Midway began running its pipe line delivery too high a kill order was issued and the Mattern was executed. The other day when it was reopened and cleaned out, the well was "beaned" down to 500 and it is clipping that off prettily.

The week passed quietly at the Springs until Sunday afternoon when the Mohawk Oil Co.'s Mutual No. 1 came galloping in at an estimated rate of 11,800 barrels, from a depth of 4650 feet, the oil testing 34 gravity. This well is located on Butler Road, in a neighborhood of big producers

Later that same afternoon the Frank Peterson Syndicate's Peterson No. 1 romped in with a flow that old time drillers said would run between 12,000 and 15,000 barrels. This well is down 4682 feet, and is producing 35 gravity oil through a 4½ inch oil string 500 feet in the sand. It will be observed that the Peterson well is 32 feet deeper than the Mohawk well, and is producing heavier in proportion to its depth.

Christening More Calamity

The L. B. Chase Oil Co. spudded in during the week the first of 12 wells which it plans to drill on the Cornell lease, a 12 acre tract in the west end of the field. The Globe Petroleum Corp. is spudding in a well on its five-acre lease. The Fisher-Gregg Oil Syndicate has just spudded in a well with ceremonies which including the breaking of a bottle of "soft" champagne across the 22 inch bit.

Interest between Santa Fe Springs and Bellflower where oil is thought to exist, has greatly revived as a result of the announcement by the Midvein Oil & Refining Co. that it will drill the first of eight wells on the Hammel ranch at once. The outfit is ready and spudding in will take place within ten days.

The Standard Oil Co. has developed another deep hole in the Pacific Clay Pipe No. 2 which has set 4½ inch casing and is standing cemented at 5440 feet. The Santa Fe Ball Oil Co. is drilling a 15-inch hole for a new well. It is going after deep production and wants to be sure of sufficient radius.

The Union Oil Co. of California is about ready to put back on production the Meyers No. 3, discovery well of the Santa Fe Springs field, which really put the field on the map as a producer of high gravity oil. The well is being redrilled and is now down about 4796 feet.

Huntington Beach kept well within reason with her development program during the week. The field put on production five wells with a total initial output of 8050 barrels a day. The largest of these is the Texcal No. 3 which started at 2050 barrels, testing 26 gravity. This well is the M. H. Mosier Special. It is 4901 feet deep. It is located on Tract Sixty-two, and was drilled by the International Petroleum Corp.

Pearce No. 1 was a redrill which originally went on production in the fall of 1921. It first came in at 2880 feet, with an 800-barrel flow, but declined rapidly, and was finally taken to a depth of 5000 feet, from which depth it is now doing 1800 barrels, testing 26 gravity. It has 870 feet of oil string. The pressure at the casing-head is 420 pounds.

Two wells rewarded the Amalgamated Oil Co. during the week. The first was Miley-Keck No. 15, a redrill which is doing 1700 barrels of 25 gravity. It is 3912 feet deep. The record of the other well was not obtainable.

White-Behr Oil Co. brought in Coogan No. 4, a 1000-barrel producer which went 4720 feet deep. It produces 25 gravity oil. The oil string in this hole is 1000 feet long. The gas pressure is 260 pounds. This well is located near the Holly sugar factory, on the south side of Garfield avenue. It is an offset to the Kiesau Syndicate well.

Hanson No. 1 was completed by the Auburn Oil Co. at a depth of 4650 feet. Its flow is 1500 barrels a day, and like most of the wells in its neighborhood, it yields 25 gravity oil. The well has 1170 feet of slotted casing. The producer is located in the center of a block of town lots, and the majority of its profits will go to Huntington Beach property owners. It was named after Chris Hanson, foreman of the Ridenour Brothers contracting concern.

Doings at Long Beach

Long Beach made an attempt to keep within the curtailment limitations, but slipped up and let eight new producers boom in with a flush production amounting to 38,900 barrels a day. The top liner of these was the General Petroleum Corp's. Black and Signal which was brought in from a depth of 5430 feet.

In addition to going on the slate as the deepest producing well in the country, this property rolled up an initial production of 12,000 barrels a day. It is producing from 1500 feet of oil sand, through 1498 feet of screen pipe. It is located between Crescent and Willow streets, just east of Walnut avenue. It is a redrill from the 3246-foot mark. In the beginning it did only 2000 bar-

rels. Its present flow is testing 30 gravity, which indicates that the greatest depths produce the highest gravity oil.

Another deep well which came in to keep the Black and Signal company is the Shell Co's. Alamitos No. 6. This well was taken down to a depth of 5250 feet and it came in at 1800 barrels. It has 1060 feet of No. 60 mesh screen in the hole. This makes two wells that the Shell Co. has taken past the 5200-foot mark in this field and from which it has gotten less than 2000 barrels a day. Its mile deep well was a disappointment in this respect.

E. G. Lewis brought in Transport No. 2 at Hoosier and Crescent street with a flow of 3000 barrels. The Marine Oil Co. put on production its Marine No. 11, on the Apex-Friedman-Ball lease and got a 3500 barrel flow.

On Monday four wells came in to boost the production 18,500 barrels at one jump. These were the Superior Oil Co's. Sandburg Crew No. 1, doing 5000 barrels; the Bartholamae No. 3 doing 7000 barrels; the H. H. Patton No. 1, doing 3000 barrels; and the Shell Co.'s Brinkley No. 1, doing 3600 barrels. Shortly after the Patton well was brought in it had to be killed because of a casing leak. It is 4127 feet deep, and is neighbor to the Miley-Keck No. 1 on California street.

Torrance Field Gaining

In the Torrance field there are now 25 wells. The production has finally gone past 5000 barrels a day. During the week the Chanslor-Canfield Midway Co. brought in Del Amo No. 4 and No. 6, both in the proven area, but surrounded by small producers. No. 4 is doing 600 barrels while the No. 6, which stands at the outskirts of Redondo, is rated at 135 barrels a day. No. 4 is 3550 feet deep and the oil tests 20 gravity.

During the next 30 days the field's daily output is expected to jump at least to 6000 or 7000 barrels a day, because five wells now in the oil sand are expected to be put on production within a month. These are the Frier No. 1, the Hub Oil Co's. Smith No. 1, the Gilmore Oil Co's. No. 1, and the Chanslor-Canfield Midway Oil Co's. No. 6 and No. 7. Both of the Chanslor-Canfield Midway wells are about ready to drill out the plug. The Smith No. 1 is being deepened.

The Superior Oil Co's. Shedd No. 1 has just been spudded in at the west side of Torrance. Machinery is being installed in Chanslor-Canfield Midway's Torrance No. 10, which is an offset to the Shedd. The Hub Oil Co. is installing machinery for two new wells on Carson street. One will offset the Standard's Torrance Community No. 3 and the other will offset Gilmore No. 1. The latter is the first of nine wells which will be put down on the Vista Highland's lease. The Superior Oil Co. is preparing to spud in a well a block north of this lease.

Drilling operations four miles from production in the Torrance field are being started by the Keystone Oil Syndicate. It has spudded in its No. 1 well on Harbor Boulevard, on a 16-acre lease, the General Petroleum Corp. and Shell Co. of California have leases in that vicinity, but the Keystone is blazing the trail on this effort, almost midway between Long Beach and Torrance.

Midway between Redondo Beach and Torrance the Shell Co's. deep test well is down 4610 feet, drilling in a hard shale formation. The Shell Co., it is understood, is not looking for startling results from this well, but hopes for oil of good gravity.

The state oil and gas supervisor's report for the week shows that 36 new wells were started during the week. There were 48 test for water shutoff, against 25 for the previous week, and seven deepening jobs, against 19 for the previous week.

Oil activities in the San Joaquin Valley are rather desultory. Two new wells were spudded in during the week by companies which are said to be putting down their first holes.

The Western Oilfields Corp. is deepening its No. 2 well on Sec. 6-31-23. The Pacific Oil Co. is repairing No. 70 on Sec. 7-32-24, in the Midway field.

California Holds Title To Most Deep Wells

By Special Correspondent

LOS ANGELES, June 15.—With 18 wells more than a mile deep, six approximately a mile deep and four considerably more than 6000 feet deep, California probably holds the world's record for deep drilling. All of the wells in the 6000 foot class are "dusters", but several are on production at or near the mile-deep level.

The Shell Co., of California was the first organization to get production from a depth of one mile. Its Foster No. 1 at Long Beach, which has been on production for several weeks, went exactly 5280 feet deep and brought up the crude. This was the signal for deep drilling in practically the entire field.

The deepest producer of the flock is the General Petroleum Corp. Black and Signal which came in at Long Beach the other day from a depth of 5430, feet doing approximately 12,000 barrels a day. Among its deep neighbors are the Shell Co's. Cosboom No. 2, down 5140 feet; Dobins No. 2, down 5040 feet; Hamilton No. 1 at 5280 feet; Wilbur No. 2 at 5055 feet; General Petroleum Corp's. K and H at 5300 feet; Scoco No. 4 at 5200 feet; Signal No. 1 doing 5000 barrels at 5300 feet; Petroleum Midway Oil Co's. Campbell No. 2 at 5300 feet; Robertson No. 3 at 5300 feet; Dabney Oil Syndicate's No. 7 on production at 5200 feet; Dabney No. 20 drilling at 5000 feet; Shell Co's. Foster No. 1 producing at 5200 feet; Superior Oil Co's. Crew No. 1 at 5000 feet.

The Standard Oil Co. has the deepest holes in California, with no production on record. They are the Torrance at Huntington Beach, abandoned at 6680 feet; Standard 1 in the Kettleman Hills, near McKittrick, 6602 feet; Packard No. 1 in the Elk Hills, 6470 feet; Brownrigg-Keller at Santa Fe Springs, 6225 feet.

Several eminent California geologists have expressed the opinion that production will probably be secured in the Southern California fields at depths around 6000 feet, but the Standard Oil Co. has failed to find it either at Huntington Beach or Santa Fe Springs, although it has good producers in both fields at much less depth.

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Russian Production Shows Small Decline

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The decrease was principally due to the falling off of Grozny gusher production. The table below gives the production in poods (62 poods equal 1 long ton; 8⅓ poods equal 1 United States barrel):

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Emba	2,002,000	2,166,000
Total	**73,850,000**	**75,564,000**

The average monthly production from all three fields in 1913 was approximately 47,000,000 poods.

Details of Baku Operations

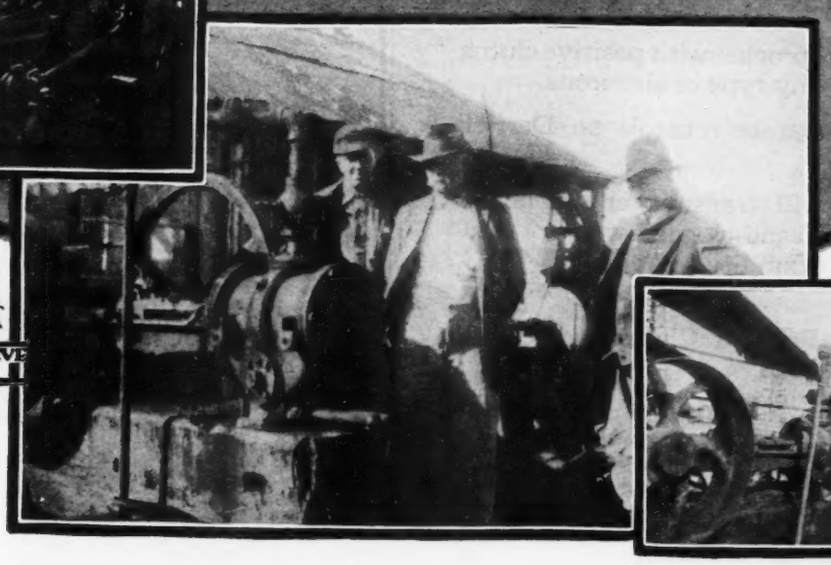
The number of wells operated in the Baku district in January was 1,442; February, 1,494; and March, 1,480. Wells drilling, which totaled 98 on January 1, reached 149 in February and 169 in March. By April 1 113 percussion rigs and 43 rotary rigs were in operation. Appreciable increase in production due to completion of new drilling operations is predicted to start in June. The approximate footage drilled was 11,039 in January, 12,495 in February, and 13,720 in March, a total of 37,254 for the quarter, as compared with 21,546 for the three preceding months.

Baku refineries worked up 30,917,000 poods of crude oil during the quarter, as compared with 30,179,000 for the last quarter of 1922, while the output of petroleum products reached 9,305,000 poods, against 11,036,000 in the same quarters. Baku oil shipments, which fell off in December, showed a perceptible increase in March, when navigation northward to Astrakhan again opened. The total shipments for the quarter reached 9,723,000 poods. Stocks at Baku were reported as 84,079,000 poods on April 1.

The Grozny District

In the Grozny fields the number of wells operated was 202 in January (including 5 gushers), 211 in Februray, and 219 in March. In spite of the increase of wells in operation, production of pumped oil decreased owing to the fact, apparently, that operations were renewed on old wells having little productive capacity, while there was a falling off in gusher production. Wells in drilling numbered 23 in January, 27 in February, and 31 in March. The footage drilled was approximately 1813 in January, 2380 in February, and 2569 in March. Oil worked up by the refineries reached 5,394,000 poods in January and 4,149,000 in February. There were piped and shipped via Grozny and Petrovsk 5,928,000 poods in January and 3,443,000 in February. Stocks on March 1 were reported to be 16,041,000 poods.

For Over Twenty Five Years this TITUSVILLE DRILLING ENGINE



TITUSVILLE OIL COUNTRY MACHINERY BUILT WITH RESERVE RUGGEDNESS

has been constantly on the job. And from the satisfactory service it has given and is giving now, the Ada Bell Oil Company, of Batson, Texas, who now own it, think it may have another 25 years or more of cheerful service in its life.

But such records are typical of TITUSVILLE DRILLING ENGINES—and of the complete Titusville Oil Field Equipment Line. Reserve Ruggedness is built into every Titusville product.

Titusville Equipment includes:

Rotary Machines
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Kentucky Refiner Seeks To Stabilize Crude Market By Contract Agreement

Staff Special

LEXINGTON, KY., June 16

ONE of the principal Independent companies of Kentucky, the Great Southern Refining Co., has started a movement which is aimed at the credit balance situation, generally recognized as a continual source of embarrassment to the refiner who depends upon Eastern crudes.

Letters have recently been received by a number of producers of Somerset grades of oil—the eastern Kentucky grades—from the Great Southern, which company operates two refineries in the state, one at Lexington and one at Pryse, and supplies crude oil for a third at Campton, Ky. The Great Southern has gathering and loading facilities in certain of the fields, but its new move is directed to the producers who are connected with the Cumberland Pipe Line Co.

The letter is as follows:

"Many of the best informed oil men are of the opinion that the violent fluctuations in the prices of Kentucky and Pennsylvania crudes, are due to the holding of large credit balances by both producers and royalty owners. Especially is this true in Kentucky.

"Not only does the oil business seriously suffer from such rapid and unexpected changes in the market, but we are of the opinion that the man who sells his oil every month, comes out better that the man who holds his oil and speculates. It is generally understood that the producing companies affiliated with the Standard Oil interests sell their oil currently,—and certainly they have better opportunities for getting advance market information than the Independents.

"Betting on the oil market, is, in our opinion, no better than betting on the stock markets,—especially because there are often times when there are no buyers for crude oil even at the posted price. When the top of an advancing market is reached; every one tries to sell. As soon as the refiners' requirements are taken care of, they quit buying, often leaving much oil in the hands of the producers. In trying to sell so much oil at one time, the market is broken and many operators have to sell their balances at a serious sacrifice. Also, the lower prices at which they are obliged to produce oil often continue for many months, and it is easier to drop prices than to advance them.

"We are continuing to buy crude oil credit balances from our regular suppliers, and paying our usual premium, although we have refused large quantities of oil offered to us at the posted market by people who usually sell to brokers or other refiners.

"We are already buying in excess of 5000 barrels of Kentucky crude oil daily, which is approximately a fourth of the oil produced in the state, and we have contracts covering the sale and purchase of most of this oil. We note, however, that a contract has not been sent to you for your signature, and knowing that you appreciate having a dependable market for your oil at a guaranteed premium above the posted price, we are sending you the enclosed, one of our standard forms of sales agreements."

It is reported that the response to this has been gratifying to the company and that it, in fact, was offered considerably more oil than its refinery requirements call for.

Area Around Swastika Well Is Taking Form

WICHITA FALLS, June 16.—Though there have been only slight extensions effected by each new producer, still the Swastika pool, in South Archer county, is definitely taking on the form of a pool. One abandonment has been reported, the Swastika's No. 1 Richardson-B east and south a few hundred feet from the discovery well, dry at 2000 feet.

A quarter of a mile northwest extension is effected by the Sun Oil Co's. No. 1 Kovar, sand at 1390 to 1393, which flowed about 15 barrels in a half hour, when sand was first drilled. The rig is being standardized.

The United Royalties No. 1 Richardson, about a quarter of a mile north east of the Swastika producers got a top sand, around 1315 feet, which showed salt water. Drilling deeper they are now preparing to test a sand drilled around 1350 feet.

The American Refining Co's. No. 1 Richardson and Clark and Clayton's No. 1 Richardson are standardizing to complete. Both these got the sand around 1380 feet, the depth in the discovery well.

The Eagle Creek No. 1 Richardson and the Eureka Drilling Co. No. 1 Richardson both had trouble with salt water. The Eagle Creek well had been plugged back, apparently successfully and is now standardizing. The Eureka well was drilled below 1390 feet, and is now being plugged back.

The Swastika Syndicate's No. 2 Richardson-A, sand at 1390, is the best well so far in this pool, having a flush production of approximately 300 barrels daily.

The line being constructed by Miller and others, from the pool to a loading rack at Olney, is reported nearing completion.

California Oil Receipts Reach 235,000 bbls. day

NEW YORK, June 16.—Receipts at Atlantic and Gulf coast ports for the week ended June 9 totaled 1,646,000 barrels, a daily average of 235,143 barrels, against 1,289,000 barrels, a daily average of 184,143 barrels for the week ended June 2.

California Oil Receipts at Atlantic and Gulf Coast Ports
(Barrels of 42 gallons)

At Atlantic Coast Ports	Week Ended June 9	Week Ended June 2
Baltimore	200,000	315,000
New York	960,000	671,000
Philadelphia	171,000	.....
Others	75,000	213,000
Total	**1,406,000**	**1,199,000**
Daily average	**200,857**	**171,286**
At Gulf Coast Ports		
New Orleans and Baton Rouge	240,000	90,000
Daily average	**34,286**	**12,857**
Total Atlantic and Gulf Coast Ports	**1,646,000**	**1,289,000**
Daily average	**235,143**	**184,143**

According to figures collected by the American Petroleum Institute, imports of petroleum (crude and refined oils) at the principal ports for the week ended June 9 totaled 2,115,000 barrels, a daily average of 302,143 barrels, compared with 1,229,000 barrels, a daily average of 175,571 barrels for the week ended June 2.

Imports of Petroleum at U. S. Ports
(Barrels of 42 gallons)

At Atlantic Coast Ports	Week Ended June 9	Week Ended June 2
Baltimore	50,000	157,000
Boston	60,000	108,000
New York	436,000	306,000
Philadelphia	248,000	.....
Others	167,000	162,000
Total	**961,000**	**733,000**
Daily average	**137,286**	**104,714**
At Atlantic Coast Ports		
Galveston district	409,000	189,000
New Orleans and Baton Rouge	347,000	124,000
Port Arthur and Sabine district	358,000	138,000
Tampa	40,000	45,000
Total	**1,154,000**	**496,000**
Daily average	**164,857**	**70,857**
At All U. S. Ports		
Total	**2,115,000**	**1,229,000**
Daily average	**302,143**	**175,571**

NOTE:—Figures are presented for the week ended Saturday morning so as to conform with period covered by the Institute report of estimates of daily average gross production. Figures are subject to revision each week. They are complete for all the principal ports where foreign mineral oil is imported.

Wildcatting In Utah

SALT LAKE, UTAH, June 16.—Utah Oil & Refining Co. is still drilling on lost sand pump in test on Farnham Dome with a total depth of about 3100 feet. The productive horizon is expected at about 3250 feet. Drilling is progressing with the hole full of water to drown out the 20 million feet of gas found at 3000 feet. Utah-Farnham Oil Co. is getting ready to drill on its 200 acres on the same structure. Utah Oil Refining Co. is also preparing to start a test on the Woodside structure 20 miles southeast of Farnham on Sec. 12 of the Fitzhugh permit.

Mountain States Petroleum Co., Gustaveson Oil Co. and the United Standard Oil Co. are also said to be securing acreage on the Woodside structure. Spanish Fork Oil Co. is drilling on the Dairy Fork structure in the Spanish Fork canyon. Ohio Oil Co., on Chalk Creek, east of Coalville, Co., is drilling near Thompson. Midwest and other companies are drilling a test in southeastern Utah on Boundary Butte.

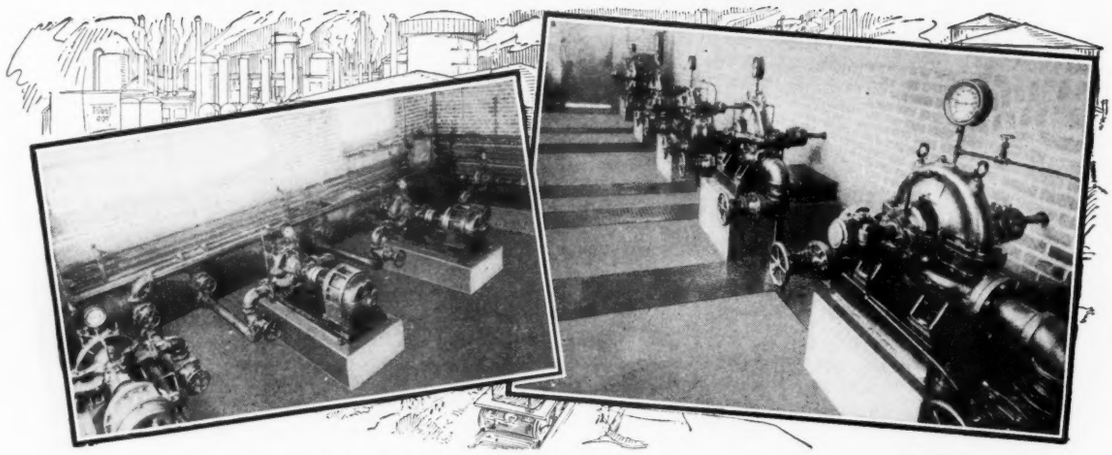
GREAT FALLS, MONT., June 16.—Among the recent completions in Montana are the following

Mid-Northern Oil Co. test on location north of the Devereaux discovery well, three miles west of the Cat Creek oil field, proper found water in the Second Kootenai sand at 1805 feet.

D. W. Snyder, et al have completed No. 1 Jensen, 36-35-3W, Kevin Sunburst field at 1550 feet with a good showing of oil. It will be shot and is expected to make a small producer.

Montana Empire Oil Co. has completed No. 1, 25-35-2W, Kevin-Sunburst field at 1462 feet. Well is rated at 50 barrels or better.

MIDWEST TURBINES AND PUMPS



Marland Refining Co., Ponca City, Okla.

IS USING 40 MIDWEST-HILL CENTRIFUGAL PUMPS

The successful performance of the Midwest-Hill Centrifugal Pumps in the Marland Refinery is typical of the excellent service which our pumps are everywhere giving in the handling of oils, gasoline, and other lighter than water liquids encountered in the oil industry.

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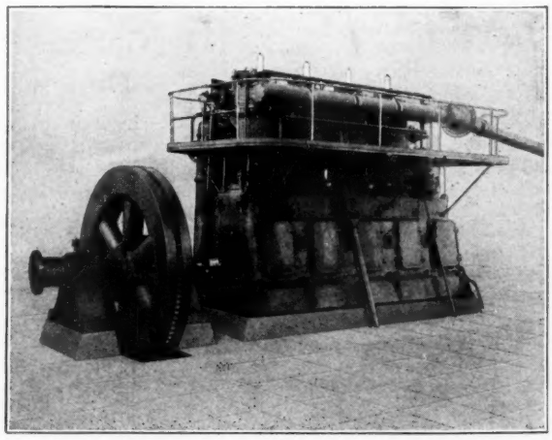

400 B. H. P. Unit for Pumping Plant

Proration Looked For

(Continued from page 67)

reported last week as showing some gas, now has a hole full of water at 2450 feet. This well is about two miles southwest of the Blackwell Oil & Gas Co. et al. No. 1 Humphrey, in 10-27-1W, which was reported about two weeks ago with an initial production of 360 barrels at 2341 feet.

Bristow

In the Bristow District, the big well of the Laurel Oil & Gas Co. in 22-16-8, which caused considerable interest when brought in some weeks ago, suddenly ceased flowing during the week. This is in line with performances of other Dutcher sand gushers in that vicinity. Cavings in the hole was the reason assigned for the cessation of production. The well of the Cortez Oil Co., its No. 1 Joe Abraham, in the NW¼ of the same section, reported last week, is still making 2500 barrels a day. It came in at the rate of 200 barrels an hour, with 15 million feet of gas.

Magnolia Petroleum's Crude Oil Runs For May

HOUSTON, June 14.—The Magnolia Petroleum Co., pipe line department, announces from Dallas headquarters the following crude oil runs for May, which are shown in comparison with April:

	April	May
Hewitt	27,134.93	26,119.65
Healdton	399,818.70	359,726.14
Cushing	98,332.21	96,138.90
Yale	49,293.37	52,106.75
Cement	40,928.36	35,991.55
Duncan	82,223.39	79,911.93
Augusta, Kans.	38,351.85	39,064.86
Walters-Beaver Creek	26,047.83	24,247.14
Bristow	26,112.00	3,643.43
Burbank	44,947.43	181,253.52
Total Okla-Kans.	**833,190.07**	**898,203.87**
Mexia	198,913.05	170,046.32
Thrall	3,120.84	2,212.49
Electra-Burkburnett	221,674.85	227,822.33
Henrietta	9,575.68	9,930.88
Corsicana heavy	14,554.93	31,173.15
Corsicana light	7,148.02	55,245.71
Comanche (Desdemona)	70,701.51	62,292.34
Olden (Ranger)	14,640.58	15,304.68
Stephens county, Tex.	47,397.08	46,910.98
Coleman county, Tex.	1,179.76	754.40
Mirando	17,678.76	21,337.61
Total Texas	**606,585.09**	**643,030.84**
Haynesville	15,102.34	14,661.24
Bull Bayou	26,174.25	26,080.53
Total Louisiana	**41,276.59**	**40,741.77**
Union County	9,623.77	9,171.44
Total Arkansas	**9,623.77**	**9,171.44**
GRAND TOTAL	**1,490,675.52**	**1,591,147.92**

Hospital In Salt Creek

CASPER, June 16.—D. H. R. Lathrop returned early in the week from New York City where he went to purchase supplies for the hospital that is being built at the camp of the Continental Oil Producing Co. at the south end of Salt Creek. The hospital is being built jointly by the Ohio, Kasoming, Carter and Continental companies. Miss Connie Ellis of the Lathrop local hospital also went to Denver to purchase furniture and additional supplies.

CHICAGO, June 16.—George F. Couteure, formerly representative of the Sun Co., in Milwaukee, has become identified with the Roxana Petroleum Corp., and has started calling on Wisconsin trade.

Jumbo!

OLD DOC SALVADOR grunted in amazed satisfaction over the contents of Bulletin No. 22.

"Jumbo!" he muttered gleefully.

"Jumbo.....?" repeated the thoughtful little man with the tortoise shell spectacles.

Then eagerly:

"Oh, yes! That's the big elephant the London Zoological Gardens sold to P. T. Barnum in 1882 and....."

"Elephant's right!" interrupted Old Doc disgustedly. "Only this particular elephant was never exhibited by P. T. Barnum. It's a 24 foot Reid All-Metal Band Wheel Power with a 24 inch stroke."

The little man whistled appreciatively.

"I have seen 16 foot Reid Pumping Powers handle thirty or forty wells for years without interruption," continued Old Doc. "It will sure be interesting to see this new brute in harness."

"Sure will," agreed the little man humbly. "If I write Frick-Reid for Bulletin No. 22, will they send me one?"

"That's what they're for!" snapped Old Doc.

Frick-Reid Supply Co.

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Geology

For the practical man in the field who wants a book that is not too technical, PROSPECTING FOR OIL AND GAS by L. S. Panyity, would be a good investment. It contains chapters on the effect of structure upon accumulations, surveying instruments and methods, geological field work and gauging oil and gas wells.

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National Petroleum News

OIL FIELD SUPPLY TRADE NEWS

Oil Companies Still Are Pressing Steel Mills For Deliveries Of Pipe

By Special Correspondent

PITTSBURGH, June 19

FROM the smallest to the largest purchaser on the books of the tubular goods producers in the Pittsburgh, Youngstown, O., and other districts, all buyers of oil country goods show no signs of slackening their efforts to have tonnage on order shipped out.

Not a day passes but numerous endeavors are made to have the mills expedite shipments of line pipe or other oil country goods on order or else to increase the tonnage coming on the books.

Latterly, lots in either of these two classes comprise one to three or eight or 10 carloads at a time. Although in one or two directions some slowing up of drilling activity has been brought about, this lack is more than made up by an increased demand from other sections. Of late it has been possible to increase pipe mill operations in one or two directions, the Republic Iron & Steel Co., for instance reporting that at Youngstown, O., it has been able to reach a 70 to 75 per cent basis.

That remains the general average, although Youngstown Sheet & Tube Co., at that same point has 10 out of 11 pipe furnaces active. The chief interruption to steady production comes in finishing departments, however, where skilled labor shortages are most severe.

No large tonnage inquiries for line pipe have come out this past week or so, and nothing more is heard of the two or three large lots that were up one and two weeks ago, 22,000 tons assorted sizes for different fields and 100 miles of 8 and 10-inch for California fields; apparently no mill can find room for these large tonnages within the time of delivery specified. The 22,000-ton inquiry apparently is entirely speculative and on that account producers would not be interested in any event, particularly now when the best possible delivery is six to eight or 10 weeks.

Some plate mills are filled up for several weeks to come and on that account are unable to quote satisfactory deliveries to fabricators who now are having a chance to bid on some tank inquiries developing from oil companies encouraged to store oil by the low priced oil market. Fabricators themselves are unable to promise any deliveries inside of three to six months. The price on plates is firm at 2.50 cents per 100 pounds, base Pittsburgh. The latest award of oil storage tankage came from the Humble Oil Co., for erection in Texas, involving 10 80,000-barrel tanks taking 3000 tons of plates. The order was taken by the Chicago Bridge & Iron Works, Chicago, and involves about $400,000. A car builder in that section is inquiring for plates for 150 cars for an unidentified oil interest in the west and the Shell interests are in the market for 150 tank cars. The Sinclair Refining Co., is in the market for 18 coke cars. It is reported that recently the Youngstown Boiler & Tank Co., Youngstown, O., was awarded a contract for 20 55,000-barrel tanks for Texas fields; the oil interest's name not being divulged. This lot would require about 3000 tons of plates.

Numerous oil companies in this country continue to seek places for tin plate tonnage. The tin plate mills booked for several weeks or several months to come are not interested in this tonnage. Occasionally place is found for 5000 base boxes or so. The minimum of the market is $5.50 per base box, Pittsburgh, 100 pounds, the United States Steel Corp. level, although some of the independents claim ability to obtain $5.75, $5.85 or even $6; others are on a parity with the leading interest. The latest inquiry developing from abroad for oil can size of tin plate, is one for 9000 base boxes for the Nippon Oil Co., Japan. Another inquiry involving 5300 base boxes, 4000 14 x 18 inch and 1300 10 x 20-inch, is understood to originate with the Ogura Oil Co., Japan. These inquiries are circulated by a New York exporting house. Tin plate mill operation is averaging between 75 and 80 per cent of capacity; here too a labor shortage manifests itself and militates against operating as many turns as otherwise would be possible, based on the present order books.

Some blue annealed sheets still are in demand for small portable or bolted oil tanks which are somewhat lighter in the material used than tanks made from plates. Blue annealed sheets are quoted at 3.00 to 3.25 cents at 100 pounds base Pittsburgh.

Transportation of oil and gasoline up the Ohio river by barges continues. The steamer Old Reliable arrived in Pittsburgh last week from Sistersville, W. Va., with one tank barge containing 90,000 gallons of gasoline. It is making regular trips. Oil Barge purchases are planned to bring crude oil from the southern districts up the Mississippi river into the Ohio river and from thence into the Monongahela and Allegheny rivers for delivery to Pittsburgh industries.

Structural shapes are fairly active, although of late there has been but little contribution from the oil industry or its affiliations. These are quoted at the same price as plates, namely, 2.50 cents, base Pittsburgh. Deliveries likewise are deferred on this product and fabricators generally are three to six months behind on deliveries of fabricated steel. The mills are several weeks behind in deliveries to fabricators. Considerable buying of structural shape material for buildings for oil interests is in prospect.

The Oil Well Supply Co., has experienced such a heavy demand for its products that expansion becomes necessary. It has filed plans for a 1-story addition.

Perhaps the largest building program projected is that of the Sinclair Consolidated Oil Corp., 45 Nassau street, New York. It plans to extend and improve its refineries at Kansas City, Houston, Tex., Coffeyville, Kan., Cushing, Okla., and East Chicago, Ind., as stated in this paper some months ago.

Considerable machinery and power equipment will be installed and the total work will cost in the neighborhood of $500,000.

Plans are being perfected for a new oil storage and distributing plant at Cape Fear River, Wilmington, N. C., by the Gulf Refining Co., W. H. Beadley, representative. This will cost with pumping machinery, $150,000.

The refinery of the Sun Oil Co., damaged by fire earlier in the month at Marcus Hook, Pa., will be rebuilt at once. The loss was approximately $50,000. Headquarters are the Finance building, Philadelphia. The Consumers' Oil Co., Blue Island, Ind., also will rebuild the portion of its plant damaged by fire May 30, with a somewhat smaller loss.

The Campbell Oil Co., Shelby, Mont., is considering plans for a new refinery in the vicinity of Seattle, Wash., to cost with machinery approximately $200,000. This interest's representatives in Seattle are Ray M. Wardall and Winter S. Martin, attorneys, L. C. Smith Building, Seattle.

A. F. Gilmore Co., 210 West Seventh street, Los Angeles, Cal., is understood to be negotiating for a site in Ventura, Cal., for a new refinery.

The Pennzoil Co., Oil City, Pa., formerly the Oil City Oil & Grease Co., has leased property in Pittsburgh for a new oil storage and distributing plant. Equipment is to be installed at once at 1739 Penn avenue, Pittsburgh.

The Mars Gasoline Co., Lewis Run, Pa., is planning for the early installation of machinery and power equipment for a new gasoline plant.

No announcement as yet has been made concerning the rebuilding of the Atlantic Refining Co., plant at Fifty-seventh and Fifty-eighth streets, Pittsburgh, which was badly damaged to an extent in excess of $500,000 by fire last Friday and Saturday. The fire started when one tank was struck by lightning on Friday afternoon.

CASPER WYO., June 16.—H. M. Alexander of the Goulds Manufacturing Co. is spending a few days in Casper extolling the merits of Goulds pumps to the trade. Mr. Alexander travels out of the Houston office to which division the Rocky Mountain territory is tributary. E. G. Goddard is sales manager for the Gulf Coast and the Rocky Mountain territory with headquarters in the Carter building at Houston.

CASPER, WYO., June 16.—E. C. McSheey of Denver, district manager for the Mark Manufacturing Co. of Chicago, spent several days the past week in Casper.

Old-Time System Of Pumping With Cable Still Used Near Parkersburg

By Lawrence E. Smith
STAFF REPRESENTATIVE

PARKERSBURG, W. VA., June 14

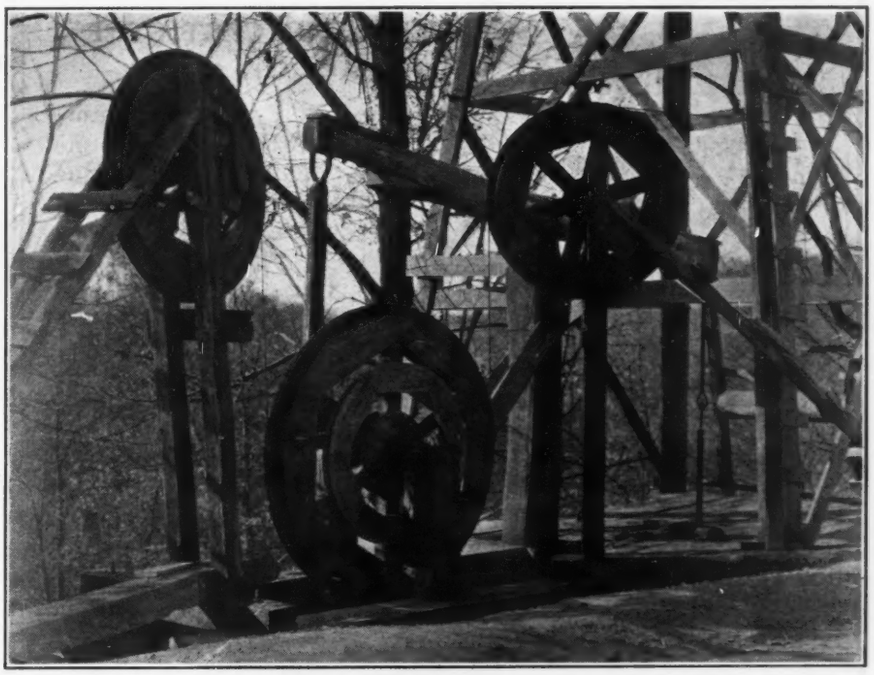
IN WHAT is now one of the backwaters of the oil industry, located on the boundary of Wood and Ritchie counties, south and east of Parkersburg better than 20 miles, there exists about as weird a system of pumping wells as is to be found anywhere.

Visitors, they say, are likely to rub their eyes when they first see the installation and declare that it can't possibly be real. It's been in existence since about 1870 and still going strong.

It is known as the endless cable method of pumping. So far as is known, it is not used anywhere else in the country, but on the properties of the Power Oil Co., known as the Volcanic tract, it answers the purpose, which is to get the power around to wells located in exceedingly rough country.

Simply stated, it operates like this: A central power which is a 40 H.P. gas engine, is belted to a large wheel in either direction inside the power house, and from these second wheels, which are outfitted with grooves, a steel cable starts off on its journey of pumping the wells. The cable runs through other grooved wooden wheels, turning them and pitman on these transmits the motion to the walking beam at the well, which in turn moves the sucker rod.

Of course there are variations to it. The same cable may pump many wells, for it does not return directly to the central power. Other grooved wheels guide it in its wanderings and it may visit a number of locations before it finally returns to the central power. The only requirements are that the cable must come back into the power "true to the direction it left and that the wheels which change its course to the various wells must be absolutely plumb with the wheels from which they take the cable, so that the cable, passing from one wheel outside the power to another, runs absolutely straight up and down.



Arrangement of wheels at well. Large wheel serves as bull wheel while other two are guides for the cable. (Photographs courtesy Parkersburg Rig & Reel Co.)

The visitor is apt to inquire where the thing winds up. The cable really is continuous and moves in and out of the power like a belt, although it may change course abruptly and travel off over several wheels at a right-angle to the direction it has been going. Or, the angle may be acute or obtuse—there is no limitation except the one of keeping the cable plumb from one wheel to the one which changes the course.

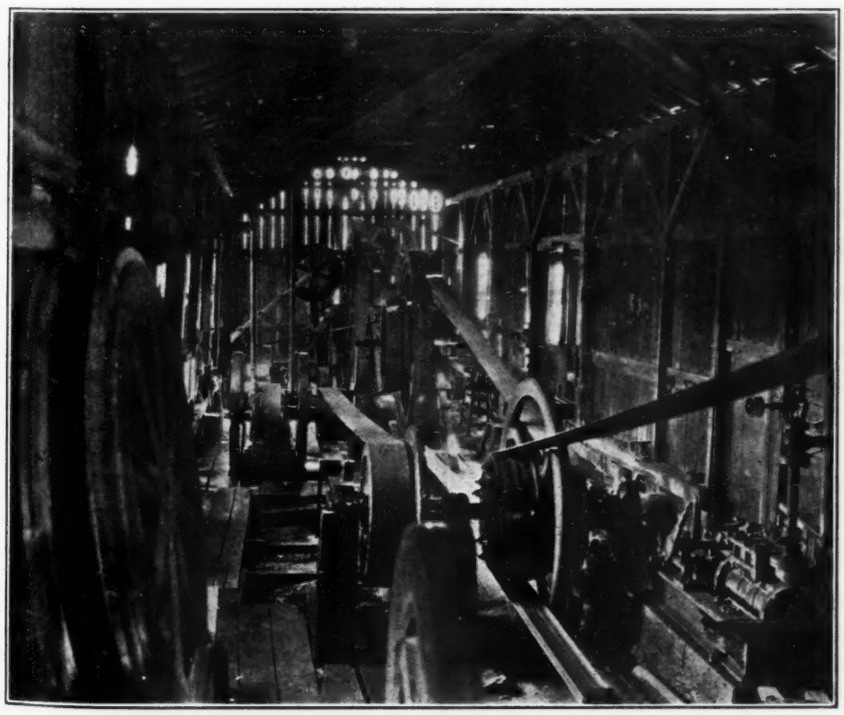
One of the powers, of which there are a number operating the 158 wells pumped by this method, operates more than 50 wells. Not all of them are on the one cable, as junctions are formed wherever desired and a second cable, drawing its power from the first, is introduced. It in turn wanders off through the woods, merely arriving at last to its starting point and coming back to the junction wheel "true," to the wheel, as otherwise the wheel would be torn to pieces.

The chief item of expense is in replacing the wheels. They are wooden, as may be seen in the accompanying photograph, and are made on the lease. These wear rapidly, there being no metal to protect the grooves.

Wheels used in the power houses in building up the power on either side of the gas engine are 14 and 18 feet while those used outside, including those which perform only the function of guiding the cable, are five and eight feet.

Production on this property is small, something under a thousand barrels a month at this time, but in its day this field was one of the busiest spots ever tapped in the Appalachian region. The nearest town. Petroleum, was a popular center at one time, possessing everything that goes with a boom oil town. No traffic ordinances are needed in it now.

Some of the wells on the tract produce a pure lubricating oil. This too, was famous in its day, and was greatly in de-

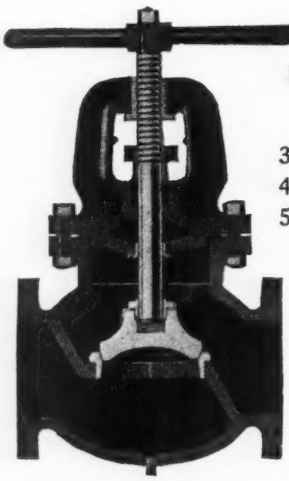


Interior of power house on Volcanic lease. Gas engine at left center with belt leading to the foreground and this in turn building up power in both directions. In the background can be seen some of the wooden angle wheels which direct the cable on its wanderings over the lease.

EDWARD VALVES

Designed and Built

For Pressure Stills



SCREWED END CAST STEEL

Sizes 1¼" to 2½"

300 lbs. pressure, 750° F total temperature
400 lbs. pressure, 700° F total temperature
500 lbs. pressure, 700° F total temperature

ILLUSTRATION AT LEFT

FIGURE NO. 684 GLOBE
NO. 685 ANGLE

SCREWED END,

FORGED STEEL

Sizes ¼" to 2"

500 lbs. pressure,
1100° F temperature

ILLUSTRATION AT RIGHT

FIGURE No. 682 GLOBE
No. 683 ANGLE

Write for Bulletin

The Edward Valve & Manufacturing Co.
EAST CHICAGO, IND.

REPRESENTATIVES IN ALL PRINCIPAL CITIES

Field Methods

are described in detail by Messrs. Cox, Dake and Muilenburg in their book entitled FIELD METHODS IN PETROLEUM GEOLOGY.

It tells about the instruments commonly used in field work and instrument methods employed; the personnel of the field party; the actual field procedure; the preparation of the map and final report.

This is a pocket edition of 305 pages and costs only $4. Mail your check to—

National Petroleum News

823 Caxton Building **Cleveland, Ohio**

mand by railways. Generally, no attempt is made now to keep this lubricating crude separate from the rest except when the Zero Oil Co., of Parkersburg, orders a car. This company merely filters the oil and sells it without otherwise refining it.

This system of pumping is used daylights only now and six days a week. While the cable runs continuously, wells are pumped in most instances only part time, being disconnected at the well and the wheels kept going, as all of them are necessary to the proper guidance of the cable.

There are no claims of superiority made for the system by G. L. Watson, who is general manager of this and several other companies operating in Eastern fields. The system was in use when the Power Oil Co. acquired the property years ago and the installation was so complete that it was not changed. One favorable point can be seen; It is an easy method of getting around over hilly country.

So, all in all, the system is one chiefly of historic interest and is peculiar in that it has outlived a lot of equipment which was invented to meet special needs at the time the industry was young and the operators were meeting each new problem with the best apparatus they could devise. Some of the equipment of the early day has fallen by the way; some of it has been improved and is in use today, but the endless cable method of pumping probably will survive as long as the property produces.

Order Sharples Process

NEW YORK, June 16.—Max B. Miller & Co., Inc., oil division of the Sharples Specialty Co., 501 Fifth avenue, have received orders for the installation of Sharples dewaxing plants from the Producers & Refiners Corp. for installation at Parco, Wyo., and from the Vulcan Oil Refining Co. for the refinery at Coraopolis, Pa.

Producers & Refiners is to make a full line of motor lubricants which will be the result of dewaxing steam refined residuum representing 32 per cent of Wyoming crude.

The Vulcan will dewax a residuum representing 30 per cent of a Pennsylvania crude. Its entire lubricant production will be from this residuum.

Kerosene Kills Jobber

CONCORDIA, KAN., June 14.—W. H. Kozel, oil jobber and coal and lumber dealer died at the hospital here from the effects of a drenching with kerosene which was showered upon him by accident at his filling station. Mr. Kozel was standing close to a 10,000-gallon kerosene storage tank which had just been filled.

The manhole cover on the tank had not been replaced and someone started the pump. The flow of oil through the intake line into the full tank forced out a shower of oil which covered Mr. Kozel from head to foot. He was perspiring and the pores absorbed the oil with fatal results. He had lived in Morrowville, Kan. for 40 years and was 65 years old.

Letters To The Editor

National Petroleum News has received the following letter from L. H. Fish, district sales manager at San Diego, Cal., of the Union Oil Co. of California. This paper is glad to give Mr. Fish the opportunity to correct the erroneous impression that has existed in the minds of many people:

"This morning I happened to be glancing through your magazine of May 23 and on page 13 the following line caught my eye. 'Another Victory Over Time.' I started to read the article and I had read down to a point in the third line which stated that these aviators 'landed in Los Angeles,' I immediately buzzed for my stenographer to take this letter.

"I am unable to determine from the page just who is responsible for this apparent misstatement of facts. Undoubtedly this article refers to the flight of Lieutenants Kelly and MacCready in the army monoplane T-2 which started from New York and landed on what is known as North Island on San Diego Bay.

"North Island is really the end of a narrow peninsula which takes off the main land about three miles north of the Mexican line on the California coast and runs in a northwesterly direction for about 10 miles. This peninsula forming the Bay of San Diego. North Island itself is made up of about 1400 acres of level land just a few feet above sea level and forms one side of the channel leading into San Diego Bay. For a good many years it has been used quite extensively by both army and navy departments as a training school for aviators. It is about two miles from the heart of the business district of the City of San Diego and approximately 135 miles from Los Angeles and it would seem that the statement referred to above should be corrected.

"Although not a native of San Diego, I have represented the Union Oil Co. here at San Diego for a number of years and have found out that there seems to be some feeling existing between the two cities. Although Los Angeles is a great city which has enjoyed a wonderful growth in the past few years and should not attempt to take away any of the glories or advertising value of this record-making flight which may be due San Diego by reason of this being the landing place of the non-stop flight."

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

6759—**Diesel and fuel oils,** Madrid, Spain, agency.

6675—**Gasoline and lubricating oils,** Bordeaux, France, agency.

6767—**Kerosene and gasoline,** Guadaloupe, agency.

6787—**Lubricating oil,** Bedzin, Poland, agency.

6742—**Petroleum products,** Hamburg, Germany, purchase and agency.

Usaco The Leading Air Compressor of a Superior Type

As applied to garage and service station air compressors, the *Two Stage* principle has long been proven superior.

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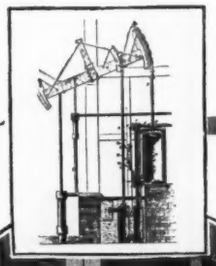
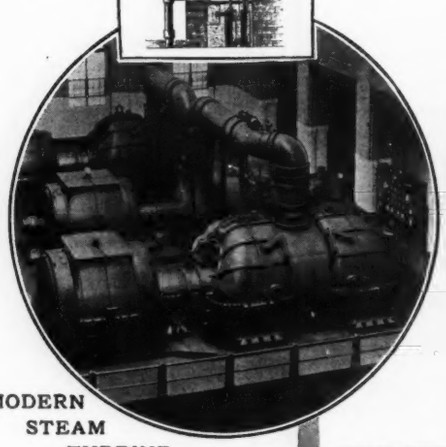
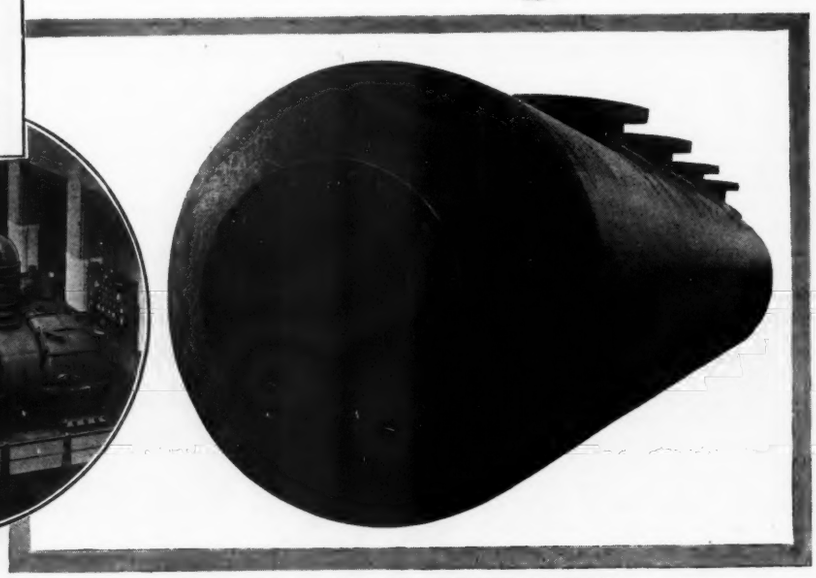
Pressure of Economic Forces



WATT'S ORIGINAL STEAM ENGINE 1774



MODERN STEAM TURBINE



THE MOST MODERN DEVELOPMENT OF STEEL PLATE CONSTRUCTION— A SEAMLESS, BOTTLE-TIGHT HAMMER-WELDED STILL

Pressure of Economic forces demanded the development of the modern steam turbine from the crude machine of James Watt.

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FORGE AND HAMMER WELDING

Mathematical Determination Of Decline Curves On Producing Properties

By Charles S. Larkey

In the following article, Charles S. Larkey, of the geological department of Sinclair Oil & Gas Co., Tulsa, presents a new method he has worked out for the mathematical determination of decline curves used in estimating future reserves of oil properties. The method given here is recommended especially for cases where production declines at a constant rate or follows a percentage curve, and where the best possible curve is desired. It gives more accurate results than other methods, but requires more time and labor in computation.

The article was presented before a recent meeting of the Tulsa section of the American Institute of Mining and Metallurgical Engineers. It was prepared under general supervision of John A. Udden, chief geologist, Sinclair Oil & Gas Co. —Editor.

NUMEROUS papers and bulletins have been published on the use of graphic methods to determine the best curve to be used in estimating the production decline of oil wells, but so far as the writer has been able to ascertain, nothing has been published dealing directly with the subject of how curves may be worked out mathematically, which will conform most closely to the production data under consideration in any given instance; hence the writer has endeavored to show by means of a few concrete examples just how such application can be made.

Among valuation engineers two types of curves are in current use, for the representation of the decline in production of oil wells. One may be represented by the equation,

$$y=kr^x,$$

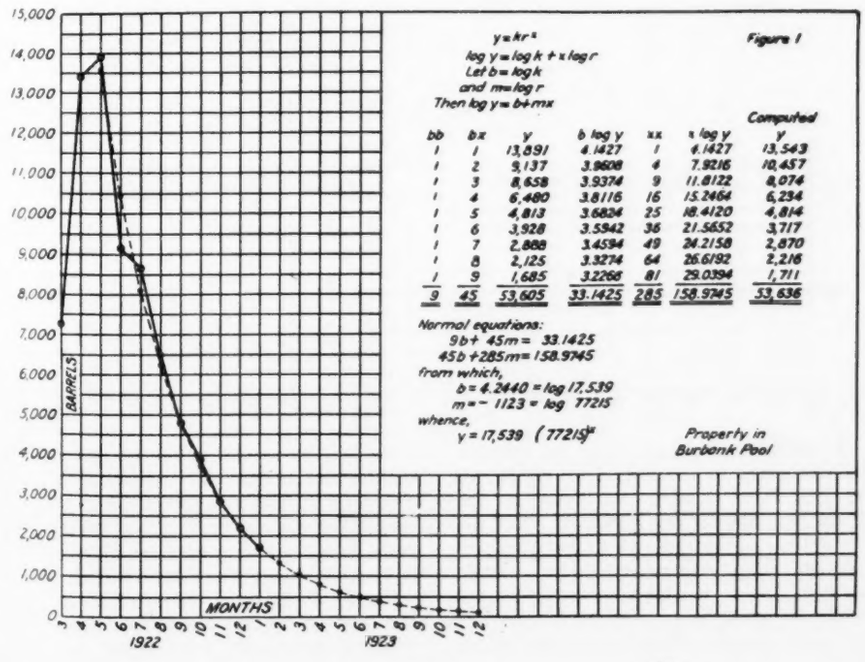
which represents a curve of the exponential type, production for any period being multiplied by a constant rate to obtain the production for the succeeding period. This curve is represented as a straight line on semi-logarithmic cross-section paper. The other curve may be represented by the equation,

$$y=kx^n,$$

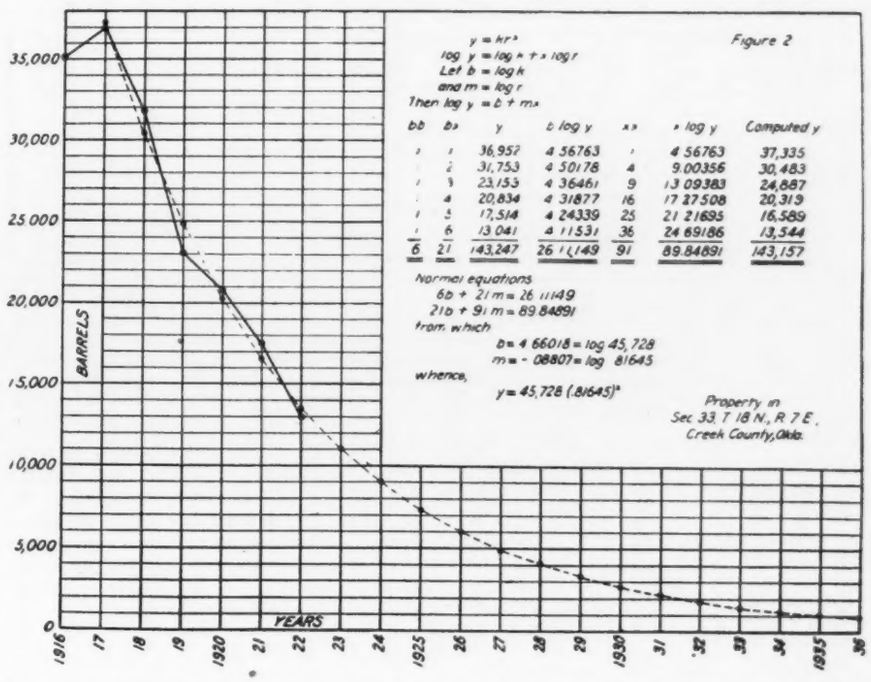
and is shown as a straight line on logarithmic cross-section paper.

In each of these equations, y represents the number of barrels produced over a given period of time and x the successive periods of time. The other letters used are constants to be determined for each well or group of wells considered, in ariving at the most probable curve to be used to represent the rate of production for the given property, and from which the underground reserves may be estimated by extrapolation, or the extending of the curve beyond the last known period of production to show the most probable production values for the future.

Figure 1 shows a property in the Burbank Pool, Osage county, Oklahoma, the production being shown as an average per well per month, plotted to the vertical scale of barrels on the left-hand margin and horizontal scale of months shown at the bottom of the chart. In the column y, the number of barrels is listed beginning with May, 1922, as the first month on which to base a decline curve.



bb	bx	y	b log y	xx	x log y	Computed y
1	1	13,891	4.1427	1	4.1427	13,543
1	2	9,137	3.9608	4	7.9216	10,457
1	3	8,658	3.9374	9	11.8122	8,074
1	4	6,480	3.8116	16	15.2464	6,234
1	5	4,813	3.6824	25	18.4120	4,814
1	6	3,928	3.5942	36	21.5652	3,717
1	7	2,888	3.4594	49	24.2158	2,870
1	8	2,125	3.3274	64	26.6192	2,216
1	9	1,685	3.2268	81	29.0394	1,711
9	45	53,605	33.1425	285	158.9745	53,636


BARRELS
YEARS
Figure 2
y = kr^x
log y = log k + x log r
Let b = log k
and m = log r
Then log y = b + mx
Normal equations
6b + 21m = 26.11149
21b + 91m = 89.84891
from which
b = 4.66018 = log 45,728
m = - .08807 = log .81645
whence,
y = 45,728 (.81645)^x
Property in
Sec. 33 T. 18 N., R. 7 E.
Creek County, Okla.

bb	bx	y	b log y	xx	x log y	Computed y
1	1	36,957	4.56763	1	4.56763	37,335
1	2	31,753	4.50178	4	9.00356	30,483
1	3	23,153	4.36461	9	13.09383	24,887
1	4	20,834	4.31877	16	17.27508	20,319
1	5	17,514	4.24339	25	21.21695	16,589
1	6	13,041	4.11531	36	24.69186	13,544
6	21	143,247	26.11149	91	89.84891	143,157

The type of curve used is of the form,

$$y=kr^x,$$

or, expressed in logarithms,

$$\log y=\log k+x \log r,$$

in which $\log k$ and $\log r$ are constants to be determined so that the curve will most closely approximate the production data given.

In order to determine the best values to be assigned these constants, the work may be tabulated as shown in Figure 1, in which, for convenience, $\log k$ is represented by b and $\log r$ by m, the equation becoming,

$$\log y=b+mx$$

Substituting the successive values of x and $\log y$ in this equation, a series of equations are formed in which m and b are unknowns. Thus, writing the unknowns in the first member and $\log y$ in the second member, the first equation, by substitution becomes,

$$b+m=4.1427,$$

the second,

$$b+2m=3.9608$$

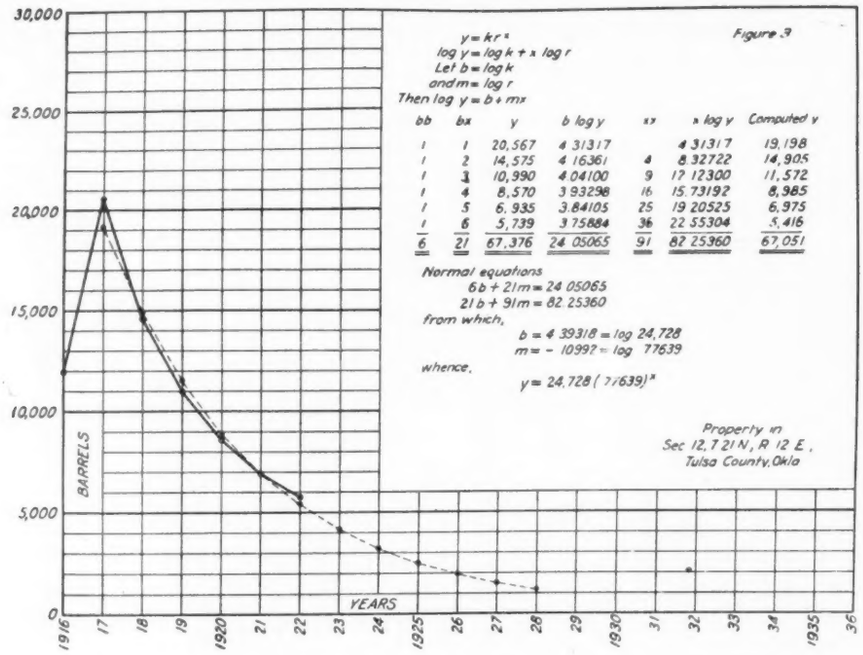
the third,

$$b+3m=3.9374, \text{ etc.},$$

one equation being formed for each set of values in x and y.

From any two of these equations thus formed b and m may be determined directly by means of the familiar algebraic principles of simultaneous equations; but if different pairs of equations be taken,

different values for b and m will be given in each instance; hence, if it is desired to obtain values such that they will most nearly satisfy the conditions of all the equations in the series, it is necessary to adopt some plan whereby each equation



is given an equal weight. This is done by multiplying each equation in turn by the co-efficient of b in such equation, and adding all the resulting equations together to form a normal equation. Then in the same manner each equation is multiplied in turn by the co-efficient of m in such equation and the resulting equations added together to form a second normal equation.

In Figure 1, under the columns headed bb, bx, and b log y are to be found the resulting co-efficients of the series when multiplied by the co-efficient of b, which it may be noted is 1 for each equation and does not change the value of the original co-efficients. The sums of these columns give the co-efficients of the first normal equation,

$$9b+45m=33.1425$$

The columns headed bx, xx and x log y, show the resulting co-efficients when each equation is multiplied by the co-efficient of m, which is the value given for x. The sums of these columns give the co-efficients for the second normal equation,

$$45b+285m=158.9745$$

Solving for b and m in these two equations it is found that

$$b=4.244=\log\ 17{,}539$$

and $m=-.1123=\log\ 0.77215$.

Substituting these values for the constants in the original equation, the curve is represented by,

$$y=17{,}539\ (.77215)^x$$

This curve is shown as a dotted line on Figure 1 and approximates the production curve very closely.

The mathematical proof that it is the most probable curve, of the type selected, to represent the given data, will not be given here as it is fully treated in a number of excellent works on the Method of Least Squares, of which method this is merely an application to a particular type of equation.

Figure 2 shows the application of the same type of equation to the production of a property in the Cushing Pool, Creek County, Oklahoma, the constants being arrived at in the same manner as before. In this example the production periods are years instead of months and the production has not been reduced to an average per well, as the same number of wells were producing throughout that portion of the life of the lease considered. If, however, it is desired to express the equation as an average per well it is only necessary to divide the constant, 45,728, shown in the final equation on Figure 2, by the number of wells actually producing.

Figure 4. Expressing the equation in the logarithmic form,

$$\log y=\log k+n \log x,$$

in which log k and n are constants to be determined. The method of determining these constants is essentially the same as that employed in the other type of equation, the principal difference being that x must be assigned some initial value such that when plotted on logarithmic cross-section paper the points will approximate a straight line. This was actually done in this instance by plotting on the logarithmic paper and shifting the points to right or left until such alignment was apparent. This gave an initial value of 5 for x, the successive values of x being in arithmetic sequence. These values are used in the table shown on Figure 4. In this table u=log y; b=log k and m=log x. The co-efficients for the first normal equation are obtained from the sums of the columns headed bb, bm and bu, which represent a series of equations multiplied by the co-efficients of the first unknown b, giving the equation,

$$6b+5.17955n=24.05065$$

The co-efficients for the second normal equation are obtained in a similar manner from the columns headed bm, mm and mu, which represent the same series of equations multiplied by the co-efficients of n, giving the equation,

$$5.17955b+4.53441n=20.64569$$

Solving these equations, it is found that

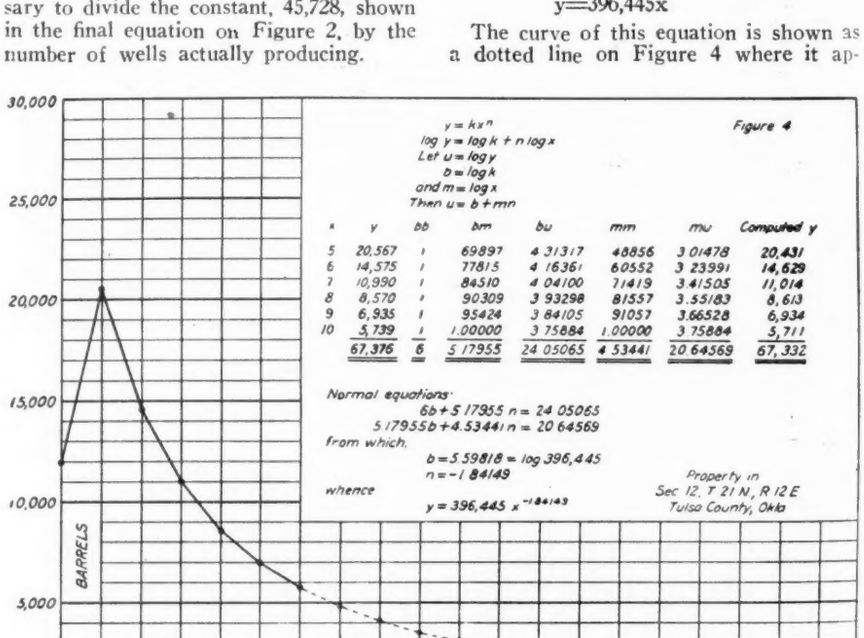
$$b=5.59818=\log\ 396{,}445$$

and $n=-1.84149$

Substituting these values in the type equation,

$$y=396{,}445x^{-1.84149}$$

The curve of this equation is shown as a dotted line on Figure 4 where it appears only in extension of the given production curve, for the reason that the computed and actual values of y are so nearly the same that the two curves almost coincide and cannot be plotted except as one curve on so small a scale.



In applying the same type of equation to a property in Section 12, T. 21 N., R. 12 E., Tulsa county, Oklahoma, it was found, as shown on Figure 3, that the theoretical curve did not follow the production curve very closely. Here clearly an equation of the type, $y=kr^x$ does not apply, hence a curve of the type, $y=kx^n$ is used. This application is shown on

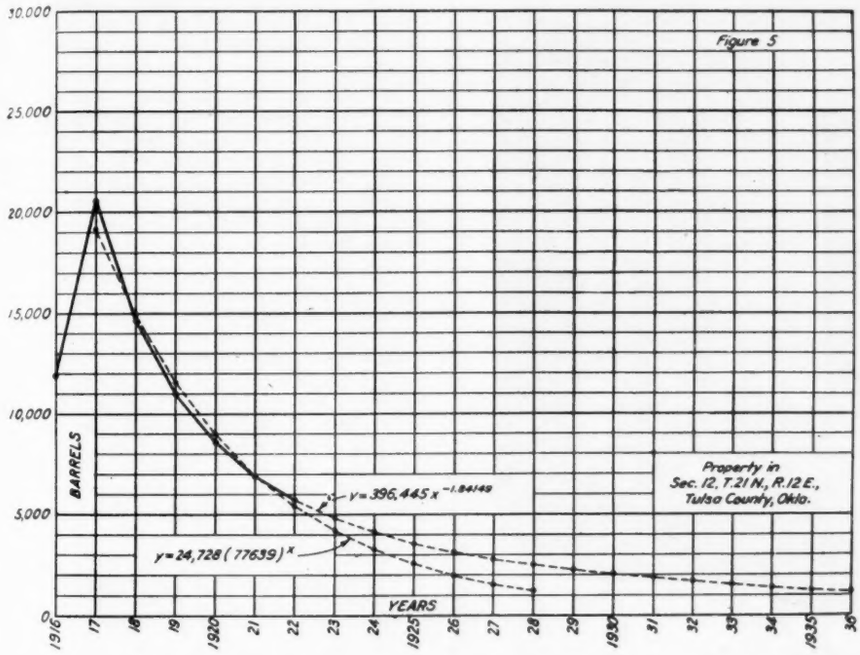
Figure 5 shows a comparison of the two types of curves as obtained from the computations shown on Figures 3 and 4.

From this comparison it is easy to see that the curve of the equation,

$$y=396{,}445x^{-1.84149}$$

or a logarithmic curve, is the best curve to use for estimating the future production of this property, and is undoubtedly the type of equation which invariably would be selected to represent any production decline which shows similar characteristics.

From the examples worked out for the different properties considered in this discussion it is to be seen that if production decline belongs to the exponential curve type, two engineers estimating the reserves for a given property should arrive at exactly the same result by applying the mathematical method outlined. But, that the results thus obtained will necessarily be nearer the true reserves than those obtained by graphic methods, cannot be definitely affirmed, for the reason that there are innumerable geologic and other factors affecting the production of an oil well, of which the engineer has no knowledge, and over which he has no control.



For curves of the logarithmic type, two engineers will arrive at the same result only if they use the same values of x for a starting point. In determining the curve of this type, shown in Figure 4, the equation arrived at represents the best curve for the given data so long as x is given an integral value. However, if fractional values are taken such as 4.8, 5.8, 6.8, etc., instead of 5, 6, 7, etc., as used, an even closer approximation curve may be found to represent the decline. In fact the writer computed another equation of the same type for this property using the values for x indicated above, and arrived at an equation,

$$y=339{,}008x^{-1.78868}$$

which actually satisfies the given conditions a little better than the equation computed in Figure 4.

This brings up the objection to a mathematical consideration of the logarithmic curve that a number of trial computations is necessary to arrive at an equation which satisfies the degree of precision desired; and inasmuch as the labor involved in carying out the necessary calculations is great, in most instances this method is prohibitive.

From the above discussion the following conclusions may be drawn:

Decline curves may be determined by the Method of Least Squares with precision for production that declines at a constant rate or follows an exponential curve, hence this method may be used where time permits and the best possible curve is desired.

For production declines following the logarithmic type curve, a number of trial computations is necessary to determine the best curve within the limits of precision assigned, hence it is questionable whether or not it is worth while to use the Method of Least Squares in working out curves of this type, especially in view of the fact that with care, almost the same result may be arrived at graphically by the use of logarithmic cross-section paper.

Bibliography Is Resumed

SAN FRANCISCO, June 14.—Publication of the monthly bibliography of petroleum and allied substances, which was discontinued several months ago, has been resumed by the Department of the Interior, distribution being made through the San Francisco, Calif., office of the Bureau of Mines. A limited edition of the bibliographies will be available for distribution among individuals, concerns or libraries who have need for a compilation of this nature. Applications to be placed upon the mailing list for the monthly bibliographies should be addressed to the Department of the Interior, Bureau of Mines, Customhouse, San Francisco, Calif.

CONCORDIA, KAN., June 14.—Charles F. Boyd, proprietor of the Boyd Oil Co. here died suddenly recently. Mr. Boyd was 45 years old and had built up a successful oil business.

Bedford Again Pleads Against Interference

CLEVELAND, June 14.—Among the addresses delivered before the convention of the Associated Advertising Clubs of the World at Atlantic City June 3 to 7, was an appeal against government interference in industry by A. C. Bedford, chairman of the board, Standard Oil Co. of New Jersey.

Admitting that the government had certain functions of supervision and regulation, Mr. Bedford added that the business discretion of government officials should not be imposed against the judgment of those experienced in the business. To illustrate his points he drew upon his experience in the oil industry, saying in part:

"I am sure I can get before you the idea I have specially in mind if I am somewhat more concrete. There is on foot in this country a frank declared movement to impose drastic government control over many of our businesses dealing with fundamental commodities. Perhaps no business is more in the public mind more than the petroleum industry with which I am particularly associated. I feel, therefore, that I can be more specific if I discuss this general problem with you in its relation to the industry with which I am most familiar. And I trust you will feel that I am not so much making a plea in behalf of any one company or interest as I am in behalf of sound practice and the promotion of American business prosperity in every direction.

"On the subject of the growth of the oil industry, I can speak without being open to any possible suspicion of self-interest, for in the aggregate that growth has been in greater proportion than the growth of the unit of the industry with which I have been identified. That growth has been misunderstood because it has not been a growth in the ordinary sense. It has been a re-creation rather than an evolution. Perhaps the easiest method of comprehending the fact that in reality a new industry has been created since about 1906 is to consider what the present status of the industry would be if kerosene had remained the principal product.

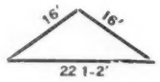
"In 1906 the petroleum industry, with combined assets not exceeding $750,000,000, existed primarily to supply the world with 33,000,000 barrels, 42 gallons to the barrel, of kerosene principally for use in kerosene lamps, which lamps themselves represented an investment by the public of a few million dollars. Suppose that there had been no internal combustion engine, no motor car, no motor launch, no airplane, the petroleum industry would be still practically in the kerosene business.

"In the year 1922 it produced 55,000,000 barrels of kerosene, which was sufficient for all needs, so that if the industry had been called upon to increase its facilities and its output to supply the kerosene market it would have been but a turbid backwater in the rushing flood of American commerce.

"Instead of that, what happened? The petroleum industry of the gasoline age is no more the petroleum industry of the kerosene age, than the great automobile industry of this country is the

Distinctive Stations

TYPE V-I



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Can Department **Wheeling, W. Va.**

multiplication of the old village wheelwright, laboriously fashioning a democrat wagon. In 1922 the petroleum industry, with combined assets ten times those of 1906 existed primarily to supply the world with approximately 150,000,000 barrels of gasoline per annum largely for use in motor vehicles, representing an investment of between ten and twelve billion dollars. In reality a new business has been born in the period referred to, the capital and facilities required for which have been such as to furnish no adequate comparison with the capital and facilities required for the old industry.

"The extraordinary—violent if you like—change that has been wrought in the industry by the development of the internal combustion engine in a very few years, has required a multiplying of capacity and financing so enormous that neither the public nor the industry itself has been able fully to comprehend just what has occurred.

"If in 1905 one could have foreseen such a transformation in the petroleum industry it would have been apparant that the creation of the production, refining and other facilities necessary to meet the requirements of the new markets for petroleum products would have been infinitely beyond the power of the major companies then in business, to finance. A new competition, quite irrespective of the vigorous growth and expansion of the then existing companies, was inevitable.

"And that is what occurred.

"With all this expansion the oil industry remains essentially a free industry. Its very nature prevents monopolization or group control. No man knows today where oil will be found tomorrow or in what quantity. No man or group of men can restrain another from seeking oil in the earth, nor, having found it, can they restrict or augment its flow.

"The expansion has come about, not through excessive profits, but because of the production and the application to a myriad of new uses, of the petroleum deposits of this and other countries. Last year the United States supplied 62 per cent of the world's production of crude petroleum.

"The industry has flourished because conditions of free competition have obtained, and because it has experienced a long period of almost uninterrupted and unexampled growth in the markets for petroleum products.

"As there can be no control over production, so there can be no great control over prices. The controlling factor in the determination of price is the fundamental law of supply and demand.

"In no other industry does this fundamental operate so relentlessly.

"The very nature of the industry precludes any artificial price fixing agency. The road the industry has travelled is strewn with the bones of those who have endeavored to run contrary to this natural law.

"Beset with natural difficulties incident to no other calling, and confronted with hazards more analogous to a game of chance than to the average commercial enterprise. The petroleum industry has been blessed in one respect. The development of no industry either in the United States or anywhere that I know

of, has afforded freer play to the initiative and the resourcefulness of American enterprise than has the petroleum industry.

"The development of the oil industry has been left to those willing to engage in it and, free from either patronage or undue restraint, it has become as a factor in the commercial life of the nation perhaps second only to the railroads. It promises even to outstrip the railroads, and for what reason? Because the railroads have been subject to government control and regulations, from which the petroleum industry has been fortunately relatively free.

"The petroleum industry during the war period, under official supervision, was wisely permitted to function according to the wisdom and experience of its own administrators, with the result that it is happily not in the plight of the railroads, and what is more important, it is in a position to afford the maximum of service and value to the state. It was a creed which I personally fervently proclaimed that the industry should be permitted to govern itself, within due and proper limits and that the government should do for it the things which it could not do for itself, and that creed is just as appropriate today as it was during the war.

"The appeal for less interference by governments in business is not a movement toward reaction, nor an effort to restore any conditions which modern business ethics have shown not to be in the public interest and for the social welfare. Business must be conducted upon an ever-higher basis, but the fundamental point is that the business discretion of men trained to practice in their profession should not be overridden by the executive judgment of government officials. Nor should governments seek to interfere with the normal operations of supply and demand. Any such effort inevitably defeats itself.

Plan Buying Fair

NEW YORK, June 14.—At a meeting of the advisory committee of the Ninth National Exposition of Chemical Industries, held June 6 at the Chemists' Club, New York, the plan to make the exposition which will be held this year at the Grand Central Palace, New York, Sept. 17 to 22, a huge chemical "buying fair" was placed before the committee.

The plan as outlined, suggested that each exhibitor make every effort to display his goods in a novel method and in a manner which to some degree, at least, will demonstrate their particular characteristics, special uses, and selling points.

The results of research on a scientifically correct anti-knock and carbon compound for internal combustion engines will be demonstrated.

LATONIA, KY., June 15.—M. R. Singleton, who has been in business for himself for a year, has succeeded Harry L. Deming as general manager of the Petroleum Refining Co., Latonia. Mr. Deming became general manager of the Lincoln Oil Refining Co. at Robinson, Ill., June 1.

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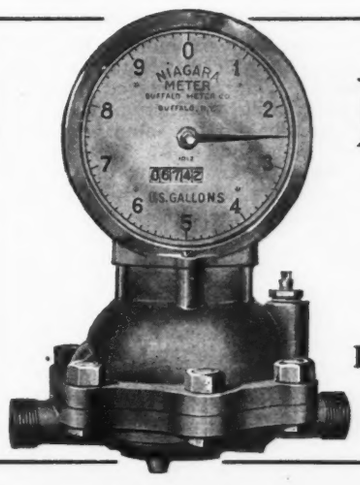

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Source Of Oil In Cretaceous Sands In Mountain States Well Mapped

By James M. Douglas
Geologist, Union Oil Co., California, in Rocky Mountain District

IN THE Rocky Mountain region there are numerous structures and the formations are well exposed along the mountain fronts. It is a region in which the underlying formations are not exposed for many miles, but have proved to be oil bearing where the structural conditions are favorable for the accumulation of oil. Therefore structure is the prime factor for the geologist to look for in that area.

In California the geologists early in the history of the oil industry recognized that the organic shales were the source of the oil and that where these shales were unusually thick, as in southern California, that nearly any kind of a favorable structure might contain oil, that is, a dome, anticline, anticlinal nose or even a structural terrace, while in the northern part of the state the prolific source of the oil was absent and therefore no matter how favorable the structures are there is practically no use of testing them as there was not a source from which oil had been derived in the underlying formations.

In Wyoming and other Rocky Mountain states the geologists have not generally recognized the provinces in which there is a source of oil, but instead have tried to solve the problem of why some structures are dry and others productive from a purely structural point of view. Therefore numerous structures that have been tested and proved not to contain oil have been recommended by geologists while others have been turned down by prominent geologists and when tested have turned out to be oil fields.

When I went to Wyoming the productive fields were in large pronounced folds with a large amount of closure and generally folds between them and the mountains, therefore some of the geologists laid down the postulate that structures in the Rocky Mountain region must have 600 or 700 feet of closure and intervening folds between them and the mountains. This assumption was rather to be expected as the geologists had not recognized that we do not have over all the Rocky Mountain region a prolific source of oil, as they have in southern California and the Mid-Continent regions. However since 1915 the Kevin-Sunburst field in northern Montana, Big Muddy, Lance Creek, Osage, Hale Anticline and other folds which did not conform to the above postulate have proven to be oil fields. Therefore we have today fairly definitely mapped out the area in which there is a source of oil in the Cretaceous formations and are mapping in the areas where there is a source of oil in the Pennsylvanian and older formations.

The source of the oil in the Cretaceous formations is the Mowry shale members which varies in thickness from nothing to 350 feet. The typical Mowry shale is about 350 feet thick in central Wyoming and thins out or changes its character to the east and west and is practically absent in the state of Nebraska. It is about 100 feet thick in northern Montana and was deposited in the eastern, north central and middle eastern parts of Montana. In Utah it is only present in a small area in the northeastern part of the state and over a very limited area in northern and central Colorado, and in only a few places in the northern and central parts of New Mexico.

Therefore, it is useless to expect to find oil fields that produce high grade paraffin oil from the Cretaceous sands outside of the above areas in the Rocky Mountain regions, and only in these areas when the structure is favorable for the accumulation of oil and there are suitable sands within reasonable drilling depth.

The asphaltic oil in Wyoming and the paraffin oil in the southeastern corner of Utah and the asphaltic and paraffin oil of the Kevin-Sunburst area in northern Montana have their source in the older formations.

In the Kevin-Sunburst field in northern Montana the oil is found in the base of the Ellis (Jurassic) formation and in a few wells in the lowest sand in the Kootenai formation, and evidently came from the Devonian shale which is highly organic and gives off a relatively large amount of oil when distilled. Further evidence that the Devonian shale is the source of this oil is the occurrence of oil in the vertical cracks in the white or gray Madison lime which is about 775 feet thick and immediately overlies the Devonian shale, and the oil is found in most of the wells in a sandy shale in the base of the Ellis formation immediately above the Madison lime.

The extent and the character of the Devonian formation throughout the Rocky Mountain region has not yet been carefully worked out, and the province in which we can expect oil from this source in commercial quantities, where the other factors are favorable, is not yet definitely known.

In Wyoming it is not definitely known just which of the lower formations is the source of the black oil, but there have been so many tests made where all the necessary conditions were favorable that we can roughly outline this area. This area extends from the Soap Creek oil field in Montana in a southwestern direction through the Big Horn Basin into central Wyoming. This area in which we may expect to find new "black" oil fields where the structural and other factors are favorable probably does not extend east of the town of Casper or southwest of the Sweetwater Uplift.

We need not expect to find any oil in Colorado in these lower horizons, although it is possible that in a very limited area in the southwest corner of the state oil may be found in commercial quantities in the Pennsylvanian formation, or in the immediately overlying formations.

The occurrence of paraffin base oil of 40 gravity in the Goodridge formation of Pennsylvanian age in the old San Juan field in southeastern Utah leads me to believe that there may be oil fields developed in this corner of Utah, and the adjacent parts of New Mexico and Arizona.

Compressed Air Makes Butler Co. Lease Gain

MARIETTA, O., June 14.—How the productivity of an old Pennsylvania lease has been "boosted," from a small figure—less than a tenth of a barrel per day—to practically three-quarters of a barrel last year—nine years afterward, is revealed by the figures on the Jane Oil Co. lease in Butler county, Pa.

This lease is now owned by the Smith & Dunn interests of Marietta. It was purchased July 1, 1918. The property was drilled in 1886-88 and at the time the present owners acquired it, had 85 producing wells. The lease is located near the old Rosenburg pool and production is found in the Hundred-foot sand at about 1200 feet depth.

For the first six months of 1913 the property produced a total of 1407.21 barrels. The compressed air system of stimulating production was applied in September of the same year and the result was shown by the production for the last six months of the year—2672.67 barrels. After this, the figures by years tell the story:

	Total
1913	4079.88
1914	10384.22
1915	10140.90
1916	10003.21
1917	9616.12
1918	11235.62
1919	11757.85
1920	9616.83
1921	9797.28
1922	13148.42

In 1917, as shown by the figures, production fell off. This was the year when the company went over the property and re-arranged its distribution of air wells and worked over many of them, shutting down parts of the lease at various times. The production dropped again in 1920, when a fire swept the property and some of the wells were lost.

The company is now producing from 46 wells, compared with 85 when the property was acquired.

Canadian Engineer Resigns

CALGARY, Alta., June 14.—S. E. Slipper, for several years petroleum engineer for the Canadian government, has announced that he is resigning that position that he may take an active part in the development which he foresees in Alberta. While he does not expect prospecting to reach its height this year, he is confident that the next two or three years will see discoveries that will satisfy the most optimistic.

* * *

KANSAS CITY, June 14.—A contract for the fabrication and erection of 10 55,000-barrel tanks has recently been awarded by the Magnolia Petroleum Co. of Dallas to the United Iron Works Inc., here, according to an announcement from the latter company. The tanks are to be fabricated in the United plant at Iola, Kan., and will be erected on the Magnolia's properties in Texas.

Sidelights From Geologists' Notebooks

Crossing Yucatan—Some Sidelights On The Gathering Of Chicle, The Chief Athletic Equipment Of The United States

PAYO OBISPO, TERRITORY DE QUINTANA ROO, MEXICO.

TODAY we hit about the farthest away place in all of Mexico, after a very interesting three months wandering around in the jungles of Campeche, Quintana Roo and Guatemala.

Leaving Laguna from where I wrote you last, we proceeded across the Laguna de Terminos by sailboat to the settlement of Pital, the headquarters of the Laguna corp., one of the largest of the four properties I am working, and from there some sixty kilometers inland on a narrow gauge railroad used by the company for the supply and evacuation of their chicle camps in the interior.

The political and market conditions have made it almost impossible to work the timber, which was formerly the main business of the company, so that the present efforts of the Laguna Corp., as well as the other American companies of the district, are directed to the production of chicle or raw chewing gum. The magnitude of this industry and the amount of the material handled is almost beyond comprehension. The manager of the corporation tells me that his companies alone shipped out of Laguna during the last season something over a million and a half pounds of the crude stuff, and although they are the largest individual shippers in the district, the total produced from Laguna alone will run well over two million pounds annually, and Laguna is but one of the shipping points of the area.

It hardly seems possible that there are enough chronic gum chewers in the States to get away with all of that, and yet it all goes to one or the other of the large chewing gum manufacturers.

Chicle or raw chewing gum is boiled down sap from a tropical fruit tree, known as the "Zapote" which grows in great abundance in these parts. The tree is tapped by a spiral groove cut in the bark from the base of the trunk to the upper limbs down which the sap flows, to be caught in rude canvas buckets at the base of the tree and carried to the nearest camp for further treatment. The people who gather this chicle are known as "chicleros."

Due to their peculiar work and their constant and nomadic life in the jungle, these people have developed into an almost distinctive race although they have come originally from all parts of the Mexican Republic, as well as the surrounding countries. They live in the woods from ten to eleven months a year, making camp wherever the zapote yields well, and moving as the woods become exhausted. The camps are nothing but a group of small, low, palm thatched huts without sides or floor, each family group having a separate hut. The camps are usually located in close proximity to a water hole and are little more than niches cleared out of the dense jungle.

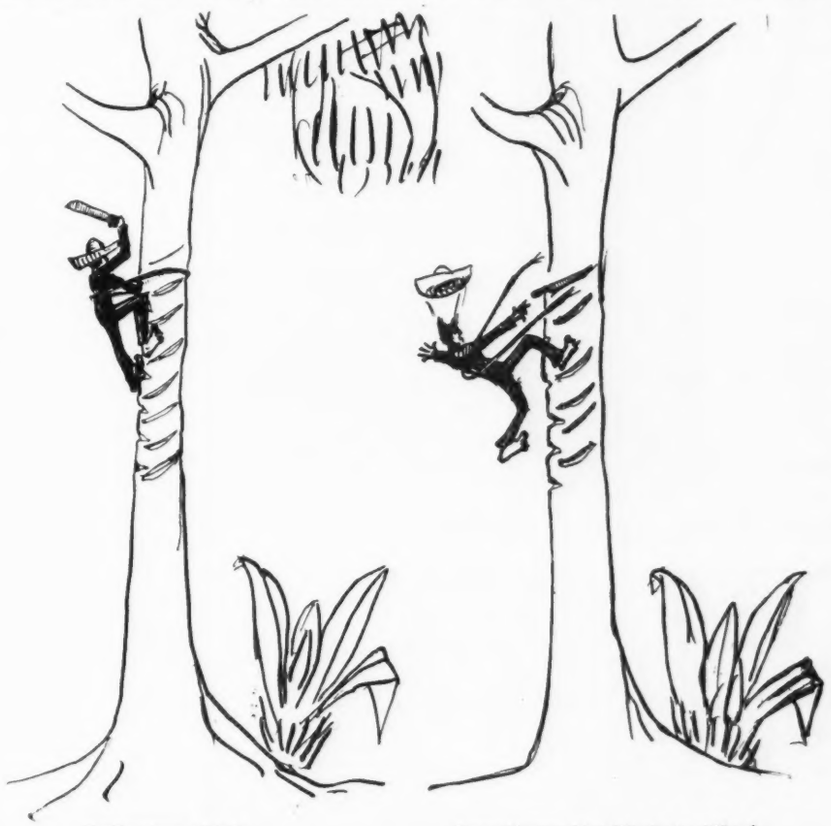
As the chief work of the chiclero is climbing and cutting, he has developed the art to such an extent that a good man in the woods is almost equal to a monkey in the ease with which he handles himself in a tree. In climbing he uses a short hemp rope known as a "soga" with which he makes a loose loop about the trunk of the tree and, by sitting in the free end and using his bare feet as a brace against the rough bark, he can run up a tree in a surprisingly short time. After selecting his tree, he adjusts his rope, and starting at the very base, cuts with his large, flat bladed, razor-like machete a deep spiral channel up to a point where the sap no longer flows. The operation looks very simple, but on trial you find that it is quite an art.

It is not pleasant to think of slashing at a tough bark with a razor-edge machete less than two inches above a light half inch rope which is all that is supporting you forty feet above the ground, where the slightest slip would sever the support and let you down, yet it is seldom that one of the chicleros comes to grief.

After the tree has drained, which may take from two to twelve hours, the sap is carried to the nearest camp where it is boiled down in great copper kettles to a sticky mass, poured into square moulds of about fifty pounds each and allowed to cool into the crude chicle of the market. This crude gum differs from the product which we buy in sealed packages only by the removal of the dirt and impurities, and the addition of sundry flavors, wrappers and fancy names. These crude cakes are wrapped in burlap sacks and piled to await the coming of the mule trains which pack them to the nearest shipping point on the river or railroad. Oftentimes the camps are three to four days mule trip from the nearest source of supply, so that during the rainy season when the jungle trails become impassable for weeks at a time, the chiclero and his family live a rather precarious existence.

Strange to relate, in a land of unrestricted personal freedom and license, the companies have successfully prohibited the sale or possession of liquor on their properties and maintan a force of armed guards of "inspectors" to watch for the "contrabandistas," who are the quivalent of the bootleggers of our more highly organized civilization. the chiclero is obligated by his contract with the company on whose land he works to sell his product to them at a specified price per kilogram; the contrabandista, however, with a mule pack train loaded with "pichoy," the native high-powered fighting variety of rum and a few cheap and gaudy trinkets for the women, can usually effect a trade unless he is run off by the inspector with whom he is usually on the best of terms, exchanging rum and his merchandise for chicle which he later sells at a large profit to the buyers on the coast. Some of the battles fought between the companies and the rum runners in the days during the war when the price of chicle was high would make a story in themselves.

The chiclero is as a rule a quiet, industrious and very hospitable person, but once started on a bottle of "pichoy," for which he seems to have no limit, he is a devil incarnate. The machete is his tool of trade, and with it he can do anything from cutting down a five foot tree to parting his best friend in



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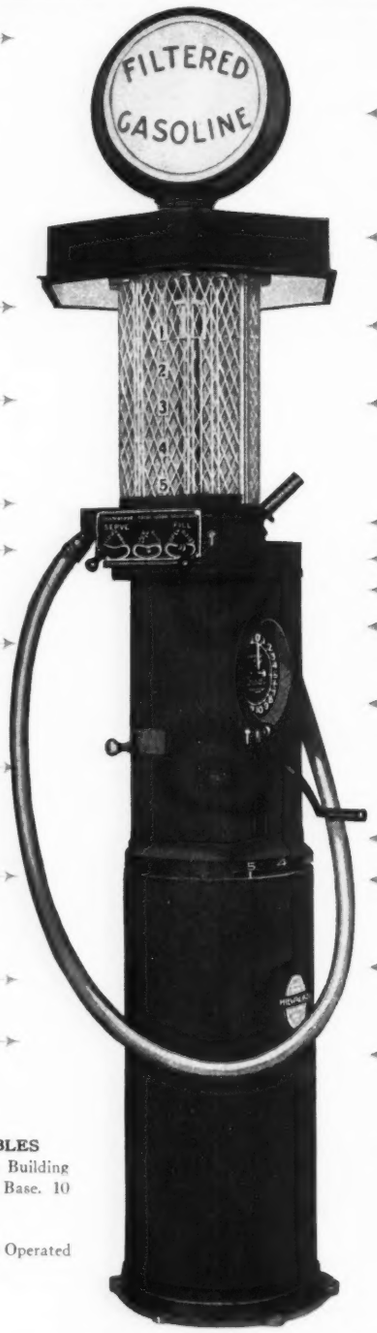

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the middle, and a camp well-heated up with rum usually shows the effect in the number of new crosses to be seen in the nearest burying ground.

The modern sociologist could well ponder over the morals of these people. It can scarcely be said that they are immoral, as they have little of our standard to go by—rather they are unmoral, at least according to our lights. Marriage is a thing very lightly entered into, and so far as form is concerned does not exist, as there is neither priest nor civil authority in the woods. The chiclero women assemble during the annual return to civilization and choose or are chosen for the following season, rather on the basis of utility than on any idea of affection. The woman furnishes such scant household utensils as are used, and invariably has a mongrel assortment of dogs, chickens, pigs and pets of all kinds and descriptions from which she is never separated. A miscellaneous flock of children which would baffle the greatest of experts on eugenics or heredity completes the family.

The woman's work is to cook, carry water, and take care of the camp while her man is working in the woods, and the manner in which she does this largely determines her popularity during the coming season. It is the common thing for a woman to live with a new man each season, and trades several times during the season by mutual consent or otherwise are not uncommon, although here the machete again plays a rather important part. The number of children, particularly of sufficient years to work in the woods, is a second factor of importance in appraising feminine values.

No mention of chicleros would be complete without the dogs—as mangy, emaciated, sore-eyed and starving, a bunch of curs as ever were assembled, yet they play a very important part in the daily life, as they enable the chiclero to track the deer and havoline, or wild hog, which furnishes the principal meat supply. A dog, a machete, and a rusty, dilapidated, wire-bound, muzzle-loading shot gun are the inseparable companions of the woods.

At the rail head of the narrow gauge we outfitted and with a pack train and two companions started for the interior. My companions were an old Mexican by the name of Don Pancho, who has been inspector for a number of years on the place and acted as a sort of guide and utility man, and a fierce-looking half breed Indian who did the packing of the animals and took care of them. We were a hard looking expedition on the trail. Don Pancho and I both carried rifles and machetes on our saddles and six shooters and knives on our belts, and the packer had a choice assortment of knives and machetes of all sizes and descriptions.

In addition to the arms, I carried the regulation geological hammer which after all, is our greatest protection, as the Mexicans have never ceased to shake their heads and mutter things about the crazy gringoes who roam their country for nothing else than to knock corners off of every rock that is exposed in the trail.

We wandered about for nearly two months getting some tweny miles into Guatemala at one time, but heading generally south and east towards the borders of Quintana Roo. In one outlaw camp in Guatemala, we arrived just as the people were in the act of packing

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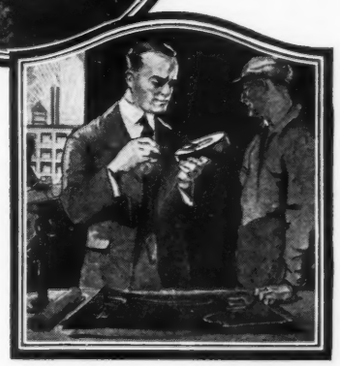

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up for leaving, and found that they were occupying the exclusive attention of a pair of tigers. They had been visited every night for a week. The first night all of the dogs and chickens were killed and carried away, later a baby girl was snatched right out of a hut and carried into the jungle, and the night before, a full grown woman was attacked and torn to pieces in the camp, so that the people were convinced that the devils were after them. I wanted to stay and try the effect of a high-powered soft point bullet on his satanic representatives, but time would not permit. The people thinking the saints were against them left the same day.

The interior of Campeche and practically all of the territory of Quintana Roo is occupied by the Maya Indians with whom the Mexicans are on very unfriendly terms. During the time of the Diaz regime determined efforts were made by the government to exterminate the race and great numbers of them were killed and driven out of the country, so that today the survivors remember their former oppressors and there are places where the life of a Mexican is anything but safe. We were warned on several occasions that we would be in danger in their country, but during the whole time we were in the interior we met with nothing but the best of treatment.

The Maya is the direct descendant of the prehistoric race the remains of whose former civilization forms one of the greatest and most fascinating archeological studies on the North American Continent. Practically the whole of the country over which we traveled is dotted with the remains of ancient cities and settlements which the jungle has reclaimed as it own. We passed through what was once the center of the great Maya Empire whose culture attained a degre of development that rivaled the glory of ancient Egypt.

The silent jungle always impresses me with an air of mystery, but to see large cities of pyramidal buildings, of sometimes up to seventy-five feet in height, overgrown with the rankest of vegetation, and great mahogany and tropical cedar trees growing from remains of the temples of this ancient people, impressed me profoundly. The area is practically unexplored and would offer virgin territory to the archeologist.

With the Oldest Man

We were forced to travel by compass and machete, for the most part cutting our way as we went, usually on some chicle trail long since overgrown. In the little Maya village of Konhaus in the very center of the State of Campeche, we picked up a shrivelled old Maya Indian for a guide to take us over to the Quintana Roo side. His name was Juan and he was older than anyone else in the country, so the trader assured us when we secured his services. Starting at daybreak we found the old fellow awaiting us with his rusty shotgun under his arm, red blanket around his shoulders, ready for a thirty-five mile trip on foot through the jungle.

Juan spoke very little Spanish, but so do I, so by means of what we knew and a generous use of signs we effected a more or less perfect understanding

and proceeded very well. About three in the afternoon we arrived at the ruins of a little village which our companion told us used to be the thriving Indian village of San Antonio. It developed that old Juan had been born and raised there and he told us the story of its desertion.

Some thirty years previous it had been a settlement of about thirty houses, with a church, market place and all, but the Indian chief quarreled with the priest and in a fit of temper struck him a blow. The priest in a fury gathered up his ecclesiastical belongings and pronouncing a curse on the village, left it never to return. That same season, so Juan told us, the "aguada" or water hole of the communtiy dried up and the people knowing that the curse was on them killed the offending chief and left the village.

As it stands today there is nothing but a few mounds of rock and rotting timber and the bare walls of the little church, the whole covered with a thick growth of underbrush. There is nothing more desolate looking than a deserted and ruined village under the best of conditions, but in the midst of the jungle I must confess that I was glad we did not have to spend the night in that place.

Memorial Ceremonies

As we passed the church the old Indian asked permission to stop a few minutes and began to clear away the underbrush along one of the side walls with his machete, as though looking for something. We dismounted to help him and he told us that his mother and father were buried in the church yard and he was looking for the graves. After a little clearing he uncovered two small mounds of rock which he carefully cleaned of all vegetation. Cutting a few small sticks he fashioned two rude crosses and then from his bag he took two candles. He placed a cross at the head of each grave and lighted a candle under the cross and kneeling and crossing himself broke out into tears, crying like a child. I think I have seen some sad and touching sights, but nothing quite had the touch of pathos and the absolute unassumed spirit of sorrow and reverence as the sight of that old Indian kneeling and crying by the graves of his mother and father, dead no one knows how many years. Tears came to all of our eyes as we realized that human emotions are about the same regardless of race, creed or clime.

Arriving at a small relay mule station by nightfall we sent the old man back and pushed on the next day alone, and here we are on the shores of the Caribbean Sea, having crossed completely the Peninsula of Yucatan.

If I can survive the mosquito bites and the numerous wood ticks and other animals which I have accumulated about my person, I hope to take a little run into British Honduras tomorrow or the next day.

The foregoing is the eleventh in a series of letters collected by L. G. Huntley, Pittsburgh, and J. Earle Brown, San Antonio, consulting geologists. The twelfth will appear

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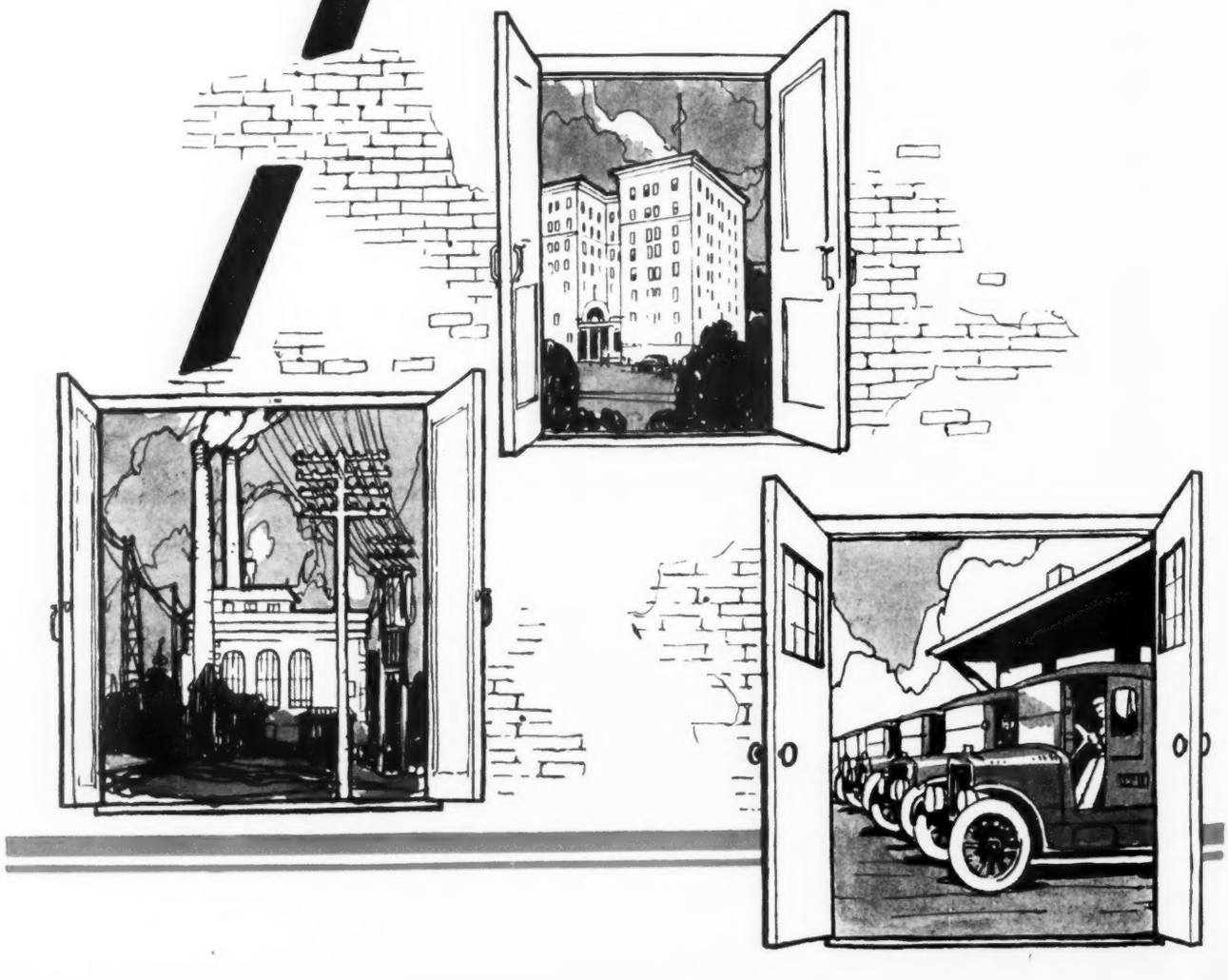


Valuable Guide To Possible Oil Sands Given By North Dakota Log

WASHINGTON, June 13

THE record of the Blum No. 1 well of the DesLacs Western Oil Co., drilled in the SW¼ sec. 4, T. 155 N., R. 85 W., Ward county, N. Dak., has given valuable information as to the thickness and character of the Upper Cretaceous formations in northwestern North Dakota. The original driller's log of this well showed little detail, and some of the subdivisions of formations inferred from it appear to have been unwarranted.

Corrections have now been made possible, however, by means of a fairly complete set of drill cuttings from the well, which were lent, to the United States Geological Survey, Department of the Interior, by Prof. Howard E. Simpson, of the North Dakota Geological Survey. These cuttings were examined by W. T. Thom. Jr., and the fossils they contain were studied by J. B. Reeside, jr. Though the well caved extensively and no samples of some parts of the log could be obtained, the following table shows with fair accuracy the thickness and the general character of the formations penetrated by the drill.

Nine sets of cuttings from this well were tested for oil or pyrobituminous (shale oil) hydrocarbons by E. T. Erickson, of the United States Geological Survey. Of these samples, those taken from depths of 2450, 2540, 3170, and 3226 feet showed traces of free oil, and samples taken from depths of 3050, 3200, and 3650 feet showed slightly larger quantities. All the samples tested yielded on distillation quantities of oil ranging from a trace to about 10 gallons a ton.

Prof. Simpson reports that traces of gas were found in practically all material taken below 250 feet. He adds: "The amount of gas present was greater at some times than at others, but, so far as I know, at no time was there a measurable amount of oil nor a sufficient amount of gas to produce a flame higher than a few inches."

It is therefore believed that the Upper Cretaceous rocks of northwestern North Dakota contain both the source rocks and the reservoir necessary for the accumulation of oil and gas, and that productive strata may be within reach of the drill over a considerable area in this part of the state. Determinations of the elevation of the Dakota sandstone at many points in the state show that the great structural basin centering near Williston has two major axes, one extending to the northwest and the other extending east-northeast, and that between these axes, northeast of their intersection, a broad upwarp in the Dakota sandstone extends from the vicinity of Westhope southwestward toward Williston. Determinations based on well records cited by A. G. Leonard, State Geologist, give approximate elevations with reference to sea level of the top of the Dakota sandstone at Enderlin, +560 feet; Valley City, +427 feet; Oakes, +440 feet; Ellendale, +420 feet; Jamestown, —50 feet; Devils Lake, +44 feet; Leeds, —600 feet; Harvey, —640 feet; well near Westhope —400 + feet. The Dakota sandstone is probably 2000 feet below sea level at the DesLacs Western well, near Lonetree, and about 400 feet below sea level at Mandan. These elevations, considered in connection with the known attitude of the younger beds of the region, appear to warrant the statement made above as to the regional attitude of the Dakota sandstone.

Minor cross folds imposed upon the regional upwarp southwest of Westhope have been described by Leonard, the largest of which is the Nesson anticline, described by Collier in Bulletin 691-G of the U. S. Geological Survey, and further described by L. P. Dove in vol. 12 of the Quarterly Journal of the University of North Dakota. This anticline trends northwestward and has a structural closure of at least 150 feet and perhaps several hundred feet. There are smaller anticlines near Mohall, in Renville county, and northwest of Minot.

The beds that lie between the Fox Hills and the Dakota sandstone probably become thinner northeastward from the DesLacs Western well, toward the rim of the Williston basin. Conversely, they probably become thicker southwestward from the well, the Fox Hill-Dakota interval being approximately 2650 feet at this well, compared with about 4200 feet near Glendive, Mont. From these intervals it is calculated that the Dakota sandstone should be reached at about 4500 feet by a well on the Nesson anticline between Hofflund and Missouri River, and other sands may be found there at considerably less depth.

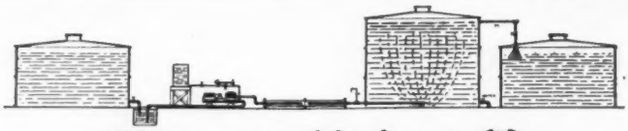
It is possible that at some points in northwestern North Dakota the Dakota sandstone may lie unconformably upon petroliferous Paleozoic formations, as it does in some areas of western Canada. As the area northeast of the trough of the Williston basin is one of ascending artesian circulation it is also more favorable for the anticlinal concentration of gas and probably of oil than an area in which water flows down the dip.

In view of the facts stated, Mr. Thom believes that northwestern North Dakota, though strictly "wildcat" territory, may contain pools of oil and gas, and that the area included in the Nesson anticline is the most favorable one to be tested first to determine whether such pools exist in the region. A well drilled two to three miles south of Hofflund should reach the Dakota sandstone at a depth of about 4,500 feet, and it might encounter productive beds at less depths.

(Continued on next page)

Generalized record of the DesLacs Western Oil Co.'s Blum No. 1 well, in the Sw.¼ sec. 4, T. 155N., R. 85W., North Dakota.

Age	Formation	Character of strata penetrated	Depth in feet
Pleistocene	Glacial drift		0— 60
Tertiary (Eocene)	Fort Union formation	Gray, rather calcareous sandy clay, with streaks of limestone, sandstone, and lignite. Hard layer, with show of gas beneath, reported by driller at 210 feet	60— 590
		Lignite	590— 598
		Sandy clay, in part calcareous	598— 900?
		Fine quartz sand, reported by driller to show oil	900?— 920
Tertiary (?) (Eocene ?)	Lance formation	Dark sandy calcareous shale, containing lignite and fragments of limestone	920— 960
		Gray muddy shale	960—1050
		Gray sandy clay, with some carbonaceous matter	1050—1075
		Gray gumbo, with fragments of light-colored limestone	1075—1125
		Gray fine-grained shaly sandstone	1125—1160
		Gray soft sticky shale	1160—1300
	Fox Hills sandstone	No cuttings; reported by driller as sandstone, with good show of oil and gas	1300—1340
Upper Cretaceous	Pierre shale	Light-gray shale, with calcareous layers	1340—1900?
		No cuttings; reported by driller as "limestone, with good show of oil"	1900?—1905
		Gray shale	1905—1960
		Light-gray shaly limestone, with fragments of fossils	1960—1980
		Gray shale, with calcareous layers	1980—?
		Whitish clay	? —2165
		Gray, rather calcareous shale	2165—2300
		Gray, calcareous shale and limestone. According to driller's report there is sandy shale and sandstone, showing 1 to 10 barrels of oil a day, between 2300 and 2310 feet, which may correspond to the gas sand of the gas field at Glendive, Mont.	2300—2320
		Gray calcareous shale; fossil fragments at 2650 feet	2320—2820
		Gray shaly limestone, with **Ostrea** and **Inoceramus**	2820—2830
		Whitish shaly limestone	2830—2833
		Gray crumbly shale	2833—2878
		Blue limestone with **Inoceramus** and **Ostrea congesta** probably corresponds to Eagle formation	2878—2900
		Dark crumbly calcareous shale. Blue limestone containing pyrite and fossils at 2995—3030 feet. Driller reports sandstone showing 1 to 10 barrels of oil a day at 3040—3043 feet. This unit probably corresponds to Telegraph Creek formation of southern Montana	2900—3133
	Niobrara formation	Blue limestone with **Baculites, Inoceramus,** and **Ostrea**	3133—3140
		Dark-blue to black calcareous shale and limestone, with **Ostrea congesta** and abundant fragments of thick-shelled **Inoceramus**	3140—3400
	Benton shale	Dark gummy, somewhat calcareous shale	3400—3476
		Dark gray, rather splintery shale; fragments of fossils	3476—3500
		Dark, rather gummy shale. According to driller, limestone and limy shale at 3460—3560 feet	3500—3650
		Dark hard massive, fairly calcareous shale	3650—3856
		Gray limestone	3856—3860
		Dark massive shale	3860—3880
		Massive gray limestone	3880—3890
		Dark hard shale and limestone with **Inoceramus**	3890—3909
		Quartz sand; may correspond to Muddy or Newcastle sand of Wyoming; called Dakota sandstone by driller	3909—3924
		Hard dark, rather calcareous shale, with Inoceramus	3924—3980



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CYLINDER ENGINE
CORDAGE

RED AND PALE PARAFFINE OILS

(Continued from page 109)

In view of the expense and risk attending such a test it would seem to be one that might well be undertaken jointly by several companies, and it should be made with great care in view of the value of an accurate determination of local subsurface stratigraphy and of the possible oil and gas content of the several porous strata that may be penetrated. If possible, arrangements should be made to drill through the Dakota and Lakota sandstones to determine the age and character of the underlying formation.

As is shown by the Ray topographic map issued by the United States Geological Survey, the suggested site for the Nesson anticline test well is near the north bank of the Missouri River and is 18 to 20 miles by road from the Great Northern Railway at Ray. Fuel for drilling can probably be most easily obtained from one of the many local lignite mines and prospects, but eastern coal could be hauled from Ray.

Will Issue Bulletin On Oil Field Salvage

WASHINGTON, June 14.—A bulletin on salvages in the oil industry is in preparation by the Bureau of Mines and in gathering material for this, C. P. Bowie, petroleum engineer, attached to the San Francisco office, has visited the San Joaquin valley fields.

Mr. Bowie visited the salvage yards of most of the larger oil companies and took a number of photographs showing pipe straightening machines, valve grinding apparatus and the like, as well as methods of reclaiming material. Some of the larger companies are giving close attention to salvage and have departments for the conduct of this work, but the majority of the smaller ones make little attempt to take care of second-hand material.

Road Ethics Advertised

CLEVELAND, June 15.—The Anglo-American Oil Co., Ltd., is publishing a series of advertisements in British periodicals which aims to educate motorists and cyclists, who are more common in England than America, in the ethics of the road. For example, one advertisement recommends to cyclists that they carry rear lights or reflectors at night, thereby removing a great deal of danger to them and saving the nerves of motorists who drive upon them unawares at night. A slogan ties the courtesty feature with the company's motor fuel. It is, "For the better spirit on the road."

Report On Lifting Costs

WASHINGTON, June 14.—In the course of a general study of oil well pumping problems being conducted by the Department of the Interior, H. C. George, oil recovery engineer of the Bureau of Mines, has collected considerable information on lifting costs in the operation of oil well properties, and has prepared lifting cost curves from these data showing the trend of lifting costs with general daily production. These data will be assembled for publication as a report of the Bureau of Mines.

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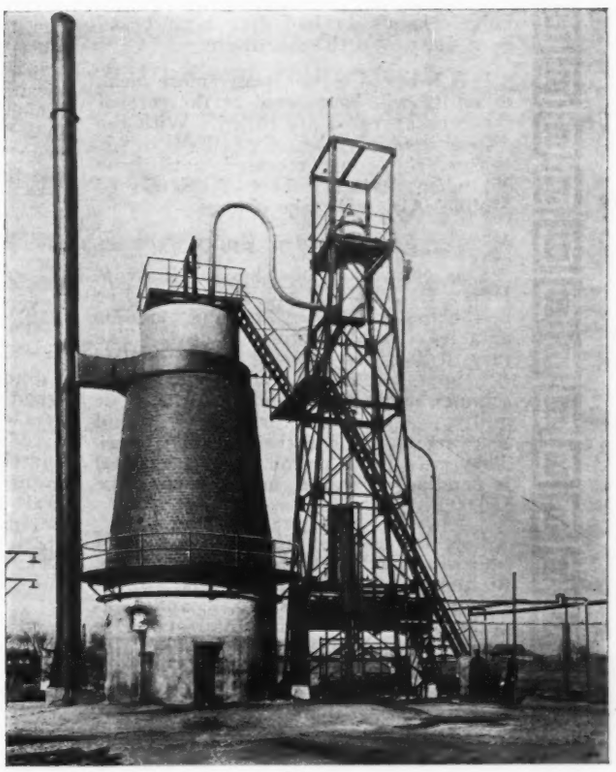

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Fort Worth Cleared Of Oil Stock Fakers As First 9 Are Convicted

FORT WORTH, June 15.—The back of the great American confidence game has been broken, so far as Fort Worth is concerned. Gentry of the oil promotion "industry" who a few months ago were rolling in ill-gotten wealth, and thought they would be unhampered in the acquisition of still more, have folded up their tents. The business of foisting bogus oil stock on the American public, of which Fort Worth previously was the center in the southwest, has been virtually eradicated from this city for the time being at least.

The keynote of the government's success in wiping out oil stock frauds here was sounded in federal court here when the thre promoters of the "General Lee" companies were convicted and given heavy prison sentences and fines, when four of their stock selling agents pleaded guilty and were nicked $10,000 each, and when J. W. Carruth and L. G. Reynolds, two of the promoters of the J. W. Carruth and Hog Creek Carruth companies, pleaded guilty after losing a fight on an immunity plea.

These were the first nine of more than 100 accused promoters to face trial When their penalties were announced by Federal District Judge Benjamin F. Bledsoe of Los Angeles, who heard the two cases here, the men were treated to as scathing a denunciation at the judge's hands as had ever been heard in a Fort Worth courtroom.

It is believed certain many more pleas of guilty will be entered as the rest of the pending cases are called. With the disposition of the Carruth-Reynolds charge, the court recessed until June 25, when Judge Robert T. Erwin of Mobile, Ala., will take charge.

Four Pleaded Guilty

The conviction of Charles Sherwin, Harry H. Schwarz and Robert A. Lee in the first case tried was the outcome of a legal battle lasting 10 days. The jury deliberated only a few minutes. At the outset of the trial, four stock selling agents had entered pleas of guilty. Attorneys for Sherwin and Schwarz announced they would appeal. They must go to prison while the appeal is pending, however, unless they make $30,000 supersedeas bonds each.

Lee, 78 years of age, was a tool of Sherwin and Schwarz in the promotion of the General Lee Interests No. 1, General Lee Interests No. 2, and General Lee Development Interests. He was falsely represented as a relative of Robert E. Lee and as a "miracle man of geology."

Evidence in the trial developed that his knowledge of geology was limited to pottering around Texas oil fields or near-oil fields with a "doodle bug." His own brother testified in the trial he had never heard of the aged faker being related to Robert E. Lee "until this oil well business started."

When J. W. Carruth and L. G. Reynolds faced the court, they set up a claim that they were immune from criminal prosecution because they had been questioned several months ago by an agent of the federal trade commission. After hearing testimony as to the facts of the federal trade commission's investigation of the Carruth companies, Judge Bledsoe denied the immunity plea, and ordered the fraud trial to proceed.

Two Change Pleas

Carruth and Reynolds then quickly agreed with Federal District Attorney Zweifel to withdraw their plea of not guilty and enter an admission of guilt on condition he would recommend the lightening of their punishment.

In sentencing the men, Judge Bledsoe drew a comparison between the fraud artist and the highwayman. The comparison was distinctly unfavorable to the promotion fraternity. Judge Bledsoe declared he knew of nothing more "despicable and indefensible" than such schemes as the defendants used to separate the public from its money. He remarked he had "listened with a feeling akin to horror" to testimony of witnesses in the Lee case as they told how agents of the brokerage concern of Leslie Vincent & Co., Chicago, robbed them on Lee stock.

The Chicago firm sold stock for Sherwin and Schwarz on a commission of 37½ per cent. How its agents worked was described in last week's **National Petroleum News.**

Frederick L. Haskins, who formerly ran the "Independent Oil News" in Fort Worth and later the "International Investor's Bulletin" in Dallas, awaits trial June 25. Haskins is now under a postal fraud order. A. F. Luse, indicted for lease deals alleged to have been fraudulent, is to be called before the court the same day.

More Indictments Certain

Simultaneously, the federal grand jury will reconvene. More indictments are certain. Postoffice inspectors and government accountants are said to have prepared evidence against at least a dozen more companies.

Success of the government's anti-fraud war is reflected in a heavy decrease in postal receipts for May, compared with the same month last year, and in an interview given out at Washington in which acting Attorney General Seymour said complaints to the postmaster general from defrauded stock buyers had practically ceased.

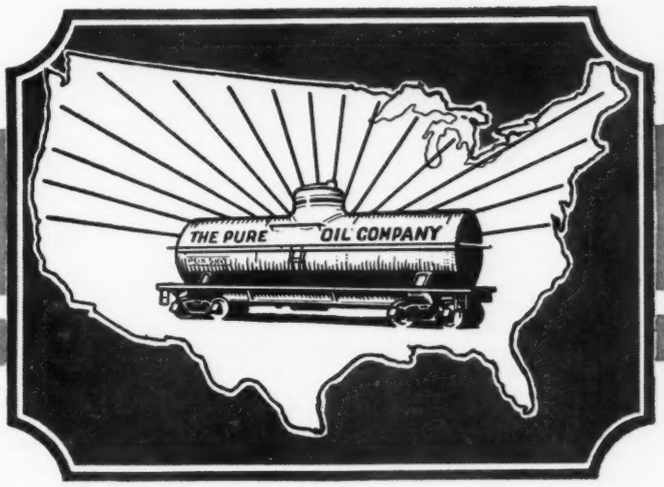
Outcome Of Trials

Lee Cases

Charles Sherwin, trustee, convicted, 10 years and $15,000.
Harry H. Schwarz, trustee, convicted, 10 years and $15,000.
Robert A. Lee, figurehead trustee, convicted, two years and $6,000.
Walter Marks Chicago broker, plea of guilty, $15,000. fine.
Phillip Goldstein, agent for Marks, plea of guilty, $10,000 fine.
Nathan Sang, agent for Marks, plea of guilty, $10,000 fine
Max Hirsch, agent for Marks, plea of guilty, $10,000 fine.

Carruth Companies

J. W. Carruth, trustee, plea of not guilty withdrawn after overruling of immunity claim; guilty plea entered, year and a day, $5,000. fine.
L. G. Reynolds, trustee, same procedure and same penalty as for Carruth.
George M. Lucas, trustee, not yet arrested.
Fines—$91,000.
Prison—24 years.



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MINNEAPOLIS, MINN.

GASSING SLIGHTLY

By Rollin Stone

On The Craggy Slopes Of Brooklyn Mountains

Triplex Mountain Camp Brooklyn, N. Y.
Note to Postmaster (2 blocks back from Brooklyn Navy Yard)

MY DEAR Hon. Mr. Rollin Stone: It is with the deepest regret that I address you from this wild west mountain camp over here in Brooklyn, N. Y. I know how much you have labored seeking an invitation to a fishing expedition this season so that it seems hardly fair that I should be the recipient of a most cordial invitation and be now taking advantage of that invitation in a real mountain camp where the fishing and the remedies for mosquito bites are excellent. Some day possibly I can prevail upon John Odin, the chief guide, steward and owner of the "shack," to ask you up here, but let me in the meanwhile regale you with some of the glories of the establishment and I know how you, out in the noise and sweat and heat and dirt of Cleveland will appreciate my extremely good fortune.

This is a real mountain log-cabin. The logs are real and they have bark on 'em besides, but it's not the only bark, thank goodness, that there is about the place. We sleep and live in the main room of the cabin but eat in a lean-to. Let me tickle your fancy by saying now that it has a brass rail and the rail is real brass.

As I write, over in the big fire-place that takes up most of one side wall, burns a fire brightly, redly and yellowly (when the different colored light bulbs give out we just cover them with paper.) On either side of the fire-place are tiers of bunks three high, warmly covered with Navajo rugs and Hudson Bay blankets. Over in the corner is a washstand properly equipped with all the essentials of cleanliness as well as a battered tin basin, real dents in it too.

The place is lighted at night by kerosene lanterns, the kind that you and grandpa used to carry out to the barn (it isn't necessary, however, to trim the wicks as they are electric bulbs.)

After you have warmed your hands and your feet and streched in that comfortable, homelike way before that brightly glowing log fire and looked at all the guns and fowling pieces and what not around on the walls and admired the bunks and even the dents in the tin wash basin, lunch is announced. You are ushered into the adjoining shanty and find yourself in a real place, such as are around the west when it's rough and rather wet, the same kind of a place that made the west famous even back in '49. Your foot goes on the brass rail, while you lean against the pine bar, admire the bottles on the shelves behind and the glasses, you hear the bartender cheerily sing out "Well, boys, what'll it be" and you tell him. While you drink it, you admire the art on the walls, you read the placards announcing rewards for various desperadoes who made the west exciting and you get the whiff of fried chicken from the pine table alongside of you.

It's a real chummy, sociable place where you can talk and talk and talk and when one foot gets tired you can put it on the floor and poise the other foot on the rail.

Well, Rollin, after we had our sarsaparilla and ginger ale—yes, we strictly adhered to the letter and intent of the 18th amendment, or was it the 19th—well, after we had our pop and coca cola, we sat down to lunch at a long pine table. John, the bartender, who was also the steward, who incidentally was the host and owner of the joint, presided over the chicken and cut it up with a hunting knife. It was regular camp stuff, no towels, no napkins, no finger bowls, no Delmonico stuff, just regular grub.

I hate to whet your appetite so much as I have and not be able to satisfy it, but I'm really in a hurry, for the boss wants to lock up the shack and I've got to hurry down thru a metal hose and tubing plant on the roof of which this camp is, grab a taxi and get over to Manhattan Island all in about fifteen minutes, but I hope some day that I can get another invitation to this place, because the fishing is certainly fine. Here's wishing you luck.

A Successful Fisherman.

Having had no anticipatory thrill out of the shack described, we may say the proposition left us stone cold. So many of our correspondents mistake the intent of our original request. We really yearned to move away out into the wilds, bait a hook with sluggish grub and go to sleep. Here is another who talks about fishing, but all he passes along is the husk of the cocoanut.

Fishing at Bristow With Contour Lines

TULSA, OKLA.

Hon Rollin Stone, Editor,

Dear Sir & Friend:—

I see where you been wanting to go on a fishing trip. You oghter been along with us last week. I am a fisherman by trade and spent last wk. down near Bristow, but we finally had to junk the hole. Say, there was everything in that well but the section township and range. It was so full they didn't even havta plug it after we give it up.

Well they tell me you're gonna take a trip out to the northwest again soon. Say I can just see you now perched up in a ringside seat at Shelby watching Jack Dempsey let Tom Gibbons stay three rounds. Pretty soft for Jack, hey, Rollin?

F. W. H.

My dear sir, prize-fighting to us is a particularly abhorrent form of sport. While we shall attend this affair at Shelby, it will be partly in the interest of the Committee on Public Morals and partly because there are a number of oil men of Wyoming and Montana we desire to see. As for the outcome of the affair, we are not the slightest bit interested, although we may have a small bet on the result, just to establish for court purposes that gambling was indulged in. In the same spirit we may partake of any strong refreshments that may be had.

Primarily, Mr. F. W. H., the trip to the northwest that you seem to have scented out, is in response to the only real invitation that has been extended. This was from Jack Hazlett, of Casper, whose message was brief and pregnant:

"Come on out and go fishing."

That man craves our society and he's going to get it.

Says a contributor, "M. H. Warren, of Oklahoma City, is wildcatting in Arizona and recently purchased a camera and a rifle. We presume he is going to shoot a well."

The more acute the over-production situation becomes in this country, the more heated up the big companies become over concessions in Turkey and Saghalien.

Unless this season of big consumption arrives pretty soon, it will take dollar gasoline to keep any of the refiners in business.

Now that the Supreme Court has finally disposed of the Steptoe gas law in West Virginia, perhaps in another five years we'll know just what the boundary of the Red River between Texas and Oklahoma is.

We are in position to deny that the shut down of the Illinois Pipe Line Co's. line over into Canada from Montana was for the purpose of cleaning out the line to use it for beer shipments when the fight crowd gathers at Shelby.

Next to seeing him on the street with his garter dangling, nothing pleases a man quite so much as to learn that the fellow he doesn't like has bought some fake oil stock.

What's become of all the lawsuits started to chase Harry Sinclair off Teapot Dome?

"Oil men weep in federal court while being sentenced, says a news item. Salt water has ended many a wildcat venture," remarks the Dallas News.

Ellick Botts, who is drilling a wildcat near Lickskillet, Montana, says he had a gas showing last week and expects the Standard Oil to buy off his driller any day now.

It was explained to us the other day why so many railroad section hands wear derby hats. Our informant, who has had experience in this line, says the gang lines up along the track when a local train goes by and when they catch some passenger with his head out of the window, throw their shovels up in his direction. If he is scared sufficiently, he jerks back and loses his hat. Derbies fall off easiest.

Ellick Botts also says that if his crew doesn't make any more hole in the Lickskillet wildcat this year than they did last, he's going to lease the slush pit for agricultural purposes.

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Newark, N. J.

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The Commercial Oil Co., Ltd.,
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Well Known Japanese Schoolboy Heavy Buyer Of Local Oil Stock

By Special Correspondent

LOS ANGELES, June 14.—When the alien land law of California, which prohibits Japanese from leasing land in this state for agricultural purposes, goes into effect Dec. 10, it will find Hashimura Togo in the oil business.

The alien land law was created to prevent Japanese from buying and leasing large tracts of land in California, and establishing thereon large colonies of Japanese for the purpose of monopolizing the truck garden business.

Several thousand Japanese farmers who are expecting to be unable to secure land to farm after the alien land law goes into effect are now trying to get rich quick over night, via the oil unit route, hoping to make a clean-up and go back home to live in luxury the remainder of their days.

A few of the leveler heads are forming Japanese oil companies with the avowed intention of developing and producing oil. Two all-Japanese oil companies have already been formed. One is drilling a well and the other plans to start the drill in a few days.

Both of these companies are operating on leases at Signal Hill, the famous Long Beach field, which until two years ago was alive with Japanese farmers who were engaged in the business of growing hot-house cucumbers.

In the oil rush which resulted after the Shell Co. of California brought in the first well there, the little brown farmers were crowded from the dome of Signal Hill, and they have since been down in the flats, around Gardena, growing strawberries.

Only one Japanese farmer made "a killing" at Signal Hill during the early oil development. His name is Shimizi. He held a lease on a piece of truck land, and subleased it to an oil company. For many months his royalty is said to have been $400 per day.

Companies having units in well syndicates to sell found the Japanese newspapers of Los Angeles splendid mediums through which to dispose of their securities, and several Los Angeles syndicate promoters have been carrying big advertisements in the Japanese newspapers for months.

Publishers Warn Readers

The ads have been accepted as legitimate advertising, but in the same issues, from time to time, the publishers have taken occasion to advise the Japanese people not to buy stock in any promotion enterprise, particularly oil syndicates.

Regardless of these warnings, however, the little brown men have been buying units with almost reckless abandon, according to reports. Among the enterprises they have invested in are those of C. C. Julian & Co. and Fred B. Foster & Co. They have also been buying considerable White Star Oil Co. securities and speculating in several royalty enterprises, prominent Japanese admit.

The manager of the Japanese Daily News of Los Angeles estimates that Los Angeles Japanese have bought at least 300 units in Julian, 100 in Foster, 100 in White Star ano perhaps 100 in each of several royalty enterprises.

Promotion companies have Japanese agents in the Japanese business districts of Los Angeles, where all the glittering details of the various speculative opportunities are unfolded for the horny-handed little strawberry growers, most of whom have considerable cash salted away up in the Yokohoma Specie Bank at the corner of First and Main streets.

"Our newspaper has been telling the Japanese farmers not to buy oil stock," says the manager of the Japanese Daily News, of Los Angeles, "and if you ask any Japanese if he owns any oil stock he will tell you that he doesn't but if you can get at the truth of the matter you will likely find that he does. We think it is bad business for these boys who have made their money by hard work in the fields to drop it in speculation, but many of them seem determined to do it."

Have Million Invested

According to the most careful estimate possible it looks as though the Japanese people in the vicinity of Los Angeles have at least $1,000,000 invested in oil companies, units, royalties or leases.

The two oil companies already organized by Los Angeles Japanese are the World Development Co., a $100,000 corporation, and the Guarantee Investment Co., capitalized at $200,000. The World company has a lease on Bixby Heights at Signal Hill, where it has already started a well. The drilling is being done by the Hackworth-Brunwin Drilling Co. The well is known at the World-Frew. The Guarantee organization has obtained a lease at Signal Hill, but has not yet started its first well.

It appears that in drafting the alien land law, which was drawn up several years ago, before the oil boom in Southern California started, the California solons overlooked a little bet in failing to provide that the Japanese should be restrained from leasing oil lands as well as agricultural lands.

Prepare For Patent Fight

TULSA, June 14.—George A. Prevost, of Washington, has been retained as legal advisor of the Association of Natural Gasoline Manufacturers on process patents following a meeting of the industry held in the offices of Chestnut & Smith Corp. here Saturday. An opinion on the legality of certain process patents will be rendered by Prevost soon.

Letters recently sent by Hope Natural Gas Co. to Saybolt licensees regarding improvement patents make it appear possible that litigation may involve Natural Gasoline Manufacturers who recently won a decision in Federal Courts disallowing Saybolt patent.

All Steel Tanks, Properly Vented, Carry Oil Contents Safely Through Fire

By Special Correspondent

NEW YORK, June 13

AN ENGINEERING report by the National Board of Fire Underwriters on refinery fires of the last two years at the Warner-Quinlan Co. plant at Warner Station, N. J., and the Barber Asphalt Co. plant at Maurer, N. J., is taken by Dr. Van H. Manning, director of research of the American Petroleum Institute, as a strong argument for a reduction in distance apart steel storage tanks must be spaced, as provided in the regulations of the National Fire Protection Association.

The oil interests, through the institute committee on fire prevention and protection of life and property, are seeking to have these distances materially reduced.

The report made by H. E. Newell, engineer with the fire underwriters board, shows in the case of both fires that all steel tanks, properly vented, withstood the flames which came in contact with the outside of the tanks themselves. The abstract of Mr. Newell's report follows:

"The behavior of the modern all-steel, gas-tight oil storage tank, when exposed to fire, is a subject well worth the careful consideration of those responsible for the safe storage of oil, and of all fire protection engineers. As is the case in the handling and storage of any highly inflammable substance, it is possible to provide safeguards of construction and operation which will greatly reduce the hazards involved. A general development and improvement has taken place in the oil industry, especially as respects tank construction, since the period of ten or twelve years ago, when wooden-roofed tanks were common, or steel tanks were often without proper vent and having supports either combustible or readily damaged by exposure to fire.

"The circumstances of two recent fires in oil properties lend themselves readily to an illustration of the value of proper construction of tanks. One is the fire that occurred at the plant of the Warner-Quinlan Company at Warner Station, New Jersey on July 18-19, 1921. This fire was personally investigated by the writer, who was present while it was still burning. The story of the fire is briefly as follows:

"The fire originated following an explosion of unknown cause in a group of refined tar and asphalt tanks. The heat of the fire naturally increased the rate of evaporation in two crude oil tanks a considerable distance away from the group of origin. One of these tanks was provided with a steel roof, and the other a roof of wood covered with sheet metal. The escaping vapors from the wooden roof tank were finally ignited by the sparks or flying brands, as there was considerable wood construction intermingled with the group of origin.

"As in the case of all wooden roof tank fires, the wooden roof quickly ignited and finally collapsed, falling into the crude oil which had ignited before this stage was reached. The highly heated or glowing pieces of carbon, mineral and vegetable matter, which are contained in crude oil, as in all such cases, finally sank to the bottom and set up a boiling condition beneath the fired surface. This wooden top tank finally boiled over and flowed in and around the numerous small storage tanks towards Staten Island Sound and finally surrounded two wooden roof crude oil tanks situated on the shore; it was the ignition and finally boiling over of these tanks which caused burning oil to be spread upon the waters of Staten Island Sound.

"In the meantime the fire in the vicinity of the first tank which boiled over had been so controlled as to permit the fire fighters to approach the second crude oil tank, which as previously stated was of all steel construction, and pump foamite into it to retard evaporation. This all steel tank was repeatedly surrounded by burning crude oil, but at the end of the fire, except for slight damage near eaves and scorching on the exterior, was still in good condition, the contents remaining intact.

"When the wooden roof tank originally boiled over, the fire fighters hastily erected a low dike to prevent the oil from flowing in the opposite direction across the tracks of the Central Railroad of New Jersey towards the small gasoline distilling group. After the initial boiling over, as previously described, they assumed that the fire was under control and devoted their efforts to other portions of the plant which were involved. While they were thus employed, the wooden roof tank again boiled over, this time flowing over the low dike and spreading rapidly across the 400 foot space to the gasoline distilling group.

"This latter consisted of a congested group of all steel tanks; three of the tanks in this group were involved; one was extensively damaged owing to the fact that the expansion of vapor within caused the lifting of the roof and ignition of contents, and further the burning crude oil on the outside created a severe exposure; one of the other tanks had the roof mainly destroyed and the other was only slightly damaged at the eaves. The fact that the tanks in this group were of all steel and provided with vents of fair size; and further, the ability of the fire department to start fire fighting practically at the time that the first tank became involved, resulted in the saving of the entire group with the exception of the damages noted.

"What should be emphasized is the fact that in this fire all steel tanks gave a decidedly good account of themselves and clearly indicate the justification of a reduction in distance for tanks of modern all steel construction; the need of prohibiting wooden top tanks, particularly for crude oil storage, is self-evident.

"Another comparatively recent New Jersey fire which serves as an illustration is the one which destroyed the greater part of the Barber Asphalt Company plant at Maurer. Here again the ignition and finally boiling over of crude oil in a wooden top tank resulted in the principal destruction caused by the fire. This fire originated in a wooden top flux tank situated about three feet distant from another flux tank of similar construction. Again the radiant heat of the burning flux and wooden roofs increased the evaporation in a large wooden top crude oil tank about 300 feet away. This latter finally caught fire, owing to the ignition of vapors and flashed back to the wooden roof. The crude oil boiled over three times during the fire and it was the second boiling over that caused the destruction of the one million dollar roofing plant.

"Each time it boiled over the burning oil completely surrounded an all steel naptha tank mounted on concrete piers. This is practically a duplicate of the condition that is found in the case of a direct fired still, and as a matter of fact this all steel naptha tank behaved as a still. The vapors as they escaped from the six-inch safety valve ignited and burned in a torch-like manner. After the fire the writer personally examined the tank and found that it simply needed a coat of asphaltum paint to put it back into commission; it was still about one-third full of naptha.

"The record above cited will doubtless be substantiated by experience in similar cases, and it will be desirable to carefully analyze the circumstances of such fires as may occur in the future. Laws and regulations governing oil storage should be drafted in the light of the full knowledge of experience, and the problems involved should be solved along engineering lines as have been those involving other hazardous materials and processes.

Shipping Board Has Sold 40 Tank Ships

By Special Correspondent

WASHINGTON, June 14. — The United States Shipping Board, since it determined to get rid of its ships, has sold 40 tankers. It has realized prices so much better than the best offers it has received for other classes of ships that the board members are said to wonder if they may not expect something of that kind to happen in the general cargo ship line.

Approximately $19,000,000 has been paid by the oil industry for the 40 tankers. Most of the sales, J. B. Smull, president of the board's emergency fleet corporation said, were for cash. A few were sold for half cash and the other half to be paid over a period of three years. The average price has been $47 per dead weight ton. That is much less than the tankers cost and much less than it would cost to build them now. Owing to the slump in shipping, however, $47 per dead weight ton is exceedingly good. The board would be pleased to sell all its ships for an average of $30 per ton.

The great production in California, of course, made the market in which the shipping board found its opportunity to get rid of some of the government's war-created property.

The tankers sold recently, the date of their sale, their size and the purchasers are as follows: The figures are dead weight tonnages:

Imlay, 9971, Malston Co., Inc., New York.

Mevania, 9826, Malston Co., Inc. New York.

City of Reno, 9909, General Petroleum Corp., New York.

Richconcal, 10,078, Beacon Oil Co., New York.

Portola Plumas, 10,078, Pure Oil S. S. Co., Philadelphia.

Devolente, 10,000, Beacon Oil Co., New York.

Hammac, 9,980, General Petroleum Corporation, New York.

(Continued on next page)

The 6 Inch Filler Openings—

on Brown Certified Ford Truck Tanks expedite filling and afford easy interior inspection. The plugs are equipped with automatic vents.

Large roomy can racks equipped with either adjustable chain or pipe guards and big can compartment enables one to carry large stock of lubricants and other petroleum products.

Incorporated in Brown Certified Ford Truck Tanks are years of experience in designing and building truck tanks that last.

Order One today for trial. Shipment from Stock. Larger sizes to your specification.

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Water White Oils	Viscous and Non-Viscous Pale Neutral Oils
Absorbent Oil	Filtered and Steam Refined Cylinder Stocks
Fuel Oil	Tempering and Tractor Oil
Gas Oil	White Paraffine Wax

Low and Regular Cold Test 300 Mineral Seal Oil
All Grades Compounded Oils

Tank Car and Mixed Carload Shipments

(Continued from page 119)

Hambra, 9,962, General Petroleum Corporation, New York.

Hamer, 9,976, General Petroleum Corporation, New York.

Kewanee, 4,907, Associated Oil Co., San Francisco.

Deroche, 10,000, Union Oil Co. of California-Los Angeles.

Warwick, 6,008, Union Oil Co. of California-Los Angeles.

Bohemian Club, 9,798, Atlantic Refining Co., Philadelphia.

Tustem, 9,799, Atlantic Refining Co., Philadelphia.

Halo, 10,078, Cities Service Co., New York.

Halsey, 10,076, Malston Co., Inc., New York.

Bidwell, 10,254, Sun Shipbuilding Co., Chester, Pa.

Miller County, 10,254, Sun Shipbuilding Co., Chester, Pa.

Cathwood, 10,078, Union Oil Co. of California-Los Angeles.

Utacarbon, 10,078, Union Oil Co. of California-Los Angeles.

City of Freeport, 6,008, Steamer Freeport Corporation.

Hahatonka, 10,238, Gulf Refining Co., Pittsburgh.

Halway, 10,078, Gulf Refining Co., Pittsburgh.

Antietam, 10,238, David Berg Industrial Alcohol Co., Philadelphia.

Hahera, 10,238, Union Oil Co. of California-Los Angeles.

Dungannon, 10,078, Texas Co., New York.

Derbyline, 10,000, Texas Co., New York.

Dillwyn, 10,000, Malston Co., Inc., New York.

Durango, 10,078, Malston Co., Inc., New York.

City of Alameda, 10,000, Pure Oil S. S. Co., Philadelphia.

Lubrieg, 9,815, Standard Oil Co. of California, San Francisco.

Hagood, 10,238, Cities Service Co., New York.

Liberty Minquas, 7,540, American Petroleum Co., Houston, Texas.

Salem County, 7,540, Galena Navigation Co., Houston, Texas.

Hugoton, 10,387, Malston Co., Inc., New York.

Danville, 6,008, Argentine Republic.

Hadnot, 9,100, Steamer Freeport Corporation of New York.

Sapulpa, 9,788, Cape Steamship Co., Philadelphia.

Quabbin, 9,683, Cape Steamship Co., Philadelphia.

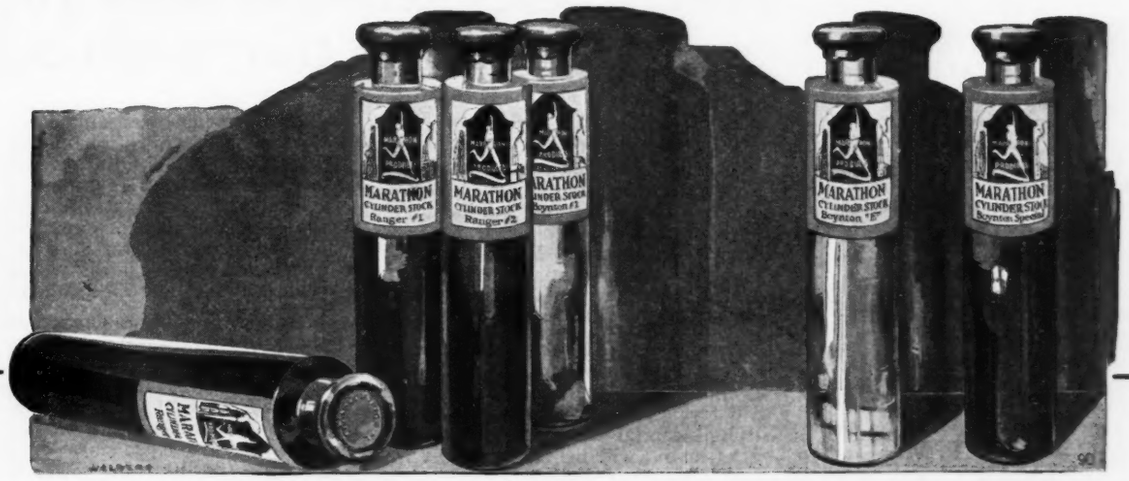
Houma, 10,387, Cape Steamship Co., Philadelphia.

Holds Annual Meeting

BILLINGS, MONT., June 14.—At a recent meeting of stockholders of the Mid-Northern Oil Co. affiliated with the Midwest Refining Co., it was reported that the company has 38 producing wells, five of which are in the Kevin-Sunburst field and the remainder in Cat Creek. H. C. Bretschneider is president of this company, Mark O. Danford, first vice-president and J. H. Clark, general manager.

Will Build Black Plant

WRAY, COLO., June 14.—The Midfield Oil Co. has contracted with the Hanley Co., of Dayton, O., to sell the gas from the Yuma county field to the latter, who will install a gasoline absorption plant and carbon black plant. Work on these plants is to be started at once. It is reported that the contract calls for the sale of gas up to 25 million feet.



What Makes These Cylinder Stocks Better?

EVERY jobber knows that some of the finest paraffin base crude is now coming out of the Ranger and Boynton fields.

Transcontinental has its own wells in those fields; its own gathering lines and storage, and from these tanks Transcontinental's own pipe lines run direct to the three Transcontinental refineries.

Is it any wonder that Marathon Stocks are *uniformly* good, when the crude base is all selected finest paraffin base? None of it comes out of a common carrier pipe line.

And then you must consider the properties of a stock made from Boynton crude. For equal flash, fire, and cold test, its viscosity will run higher than the *best* Pennsylvania. The fire test is over 600 and the cold test lower than common—and it is on this end that a few degrees really count.

—And besides, this Ranger and Boynton Stock is an economical buy.

Let us quote you on

Ranger No. 1 cylinder stock
Ranger No. 2 cylinder stock
Boynton No. 1 cylinder stock
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delivered to your siding in one of Transcontinental's tank cars.

TRANSCONTINENTAL OIL COMPANY

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Retail branches and warehouses in principal cities

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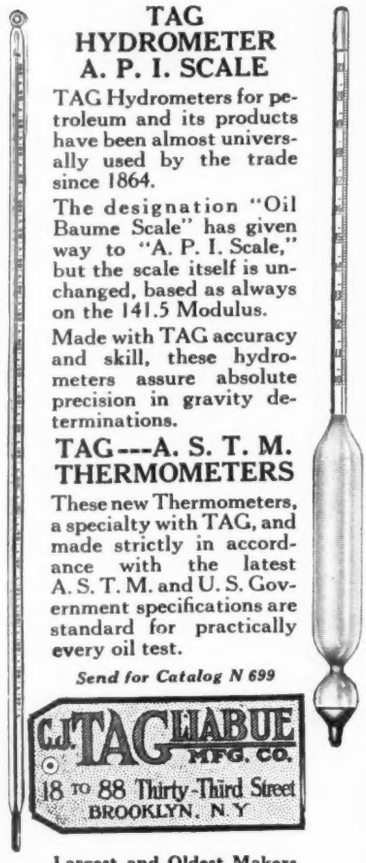
MARATHON CYLINDER STOCK

RANGER & BOYNTON

Gasoline Kerosene Waxes



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TAG Hydrometers for petroleum and its products have been almost universally used by the trade since 1864.

The designation "Oil Baume Scale" has given way to "A. P. I. Scale," but the scale itself is unchanged, based as always on the 141.5 Modulus.

Made with TAG accuracy and skill, these hydrometers assure absolute precision in gravity determinations.

TAG---A. S. T. M. THERMOMETERS

These new Thermometers, a specialty with TAG, and made strictly in accordance with the latest A. S. T. M. and U. S. Government specifications are standard for practically every oil test.

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Largest and Oldest Makers of Oil-Testing Instruments.

The Great Ship Now on the Route

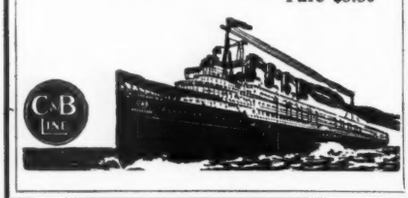
The largest and most costly steamer on inland waters of the world, the Great Ship "SEEANDBEE", with her sister ship "City of Buffalo", is now operating daily between Cleveland and Buffalo.

Travelers may leave Cleveland or Buffalo on C. & B. Line steamers any evening at 9:00 (Eastern Standard Time), enjoy a night of refreshing sleep on Lake Erie and arrive at destination following morning at 7:30.

Automobile tourists will find this a delightful way of relieving the monotony of long overland tours, and thousands of motorists each year make use of this "Save a Day" car-by-steamer service.

Railroad tickets reading between Cleveland and Buffalo (in either direction) are good for transportation on these steamers.

The Cleveland and Buffalo Transit Company, Cleveland, Ohio
Fare $5.50



Roxana Leads Refineries' Move To Establish Own Retail Outlets

Staff Special

ST. LOUIS, June 15.—Unless some type of marginal contract is worked out between refiner and jobber which will eliminate the feast and famine periods and give each party to the transaction a fair price at all times, Mid-Continent refiners of a substantial character will build up their own distributing systems.

Refiners with millions invested in their business will not continue pocketing tremendous losses in periods of depression while another branch of the industry is making long profits. If additional capital is required to gain an outlet, steps will be taken to get it.

That is the opinion of a number of the most important refiners in the field. The idea has been growing for several months and definite results in a large way are becoming apparent.

In the past, the Roxana Petroleum Corp. (subsidiary of the Royal Dutch-Shell) has been content to market products from its refinery near St. Louis to the jobbers. Within the last two months it has begun to build up its own distributing system.

On the Pacific coast the Shell Co. of California, a sister corporation of the Royal Dutch Shell group, is one of the "Big 4" as a marketer in that area.

Indications are now that Roxana will rank as one of the most important distributors in the central west before another year has passed. On April 1 it established marketing divisions at St. Louis and Chicago. The Chicago division is charged with the responsibility of building up sales and the purchase or construction of bulk and filling stations for a greater part of the state.

At St. Louis, D. E. Lavin was transferred from the accounting department and instructed to follow a similar plan for St. Louis and vicinity. Since that date approximately 12 filling stations have been built or acquired in St. Louis. One large bulk station will be completed in another week and four are planned for early construction.

There are now 10 tank wagons operating in St. Louis and a corps of salesmen is seeking business. Next month the fleet will be increased to 15 trucks.

There appear to be no extensive groups of stations in St. Louis which appeal to Roxana for purchase as has been done in some other localities. Many of the stations have accessory departments and Roxana prefers to center its activity on oil and gasoline sales. A large number of sites for filling stations are under consideration at this time. It is understood that the Roxana plans to contemplate the construction of around 50 stations in St. Louis alone within the next few months. If that program is carried out the company will be as important a factor in the city as the Standard Oil Co. of Indiana and have more facilities than any other single organization.

Activities of the St. Louis district include some southern Illinois cities. Distributing facilities are being built up at Granite City, Alton and Wood River. Eventually it will control all of Missouri and certain other territory.

A start has been made in Indiana through the acquisition of the business of the Tri-State Oil Co. Headquarters are maintained at Seymour, with C. C. Freeman in charge of the district. The same general plan of expansion as rapidly as desirable sites may be leased or purchased and business worked up for tank wagons, is to be followed there.

Announcement was made on May 18 that Roxana has purchased the entire stock in the Lilly White Oil Co. which operates 18 bulk stations and several hundred filling stations and pump connections in western Ohio. This gives the corporation a larger nucleus for its proposed expansion in Ohio than in any of the other central states in which it proposes to market its goods.

Roxana now has a 15,000-barrel refinery at Roxana, Ill., which it supplies with crude by pipe line from the Mid-Continent. It is now building a 14,000-barrel plant at Arkansas City, Kan. The new plant will be far enough along so that operations will be begun about Nov. 1, of this year. With a refining capacity of 29,000 barrels, with its large production of crude and its affiliated pipe lines, the Roxana will take its place as one of the outstanding complete organizations of the middle west.

It is understood that distribution of a part of the Arkansas City refinery output will be undertaken through stations to be acquired in western Missouri, Kansas, Nebraska, Iowa and other adjacent states where transportation facilities are available.

Roxana is not the only refining company with a distributing program. The list of refiners who have been gradually preparing an outlet for a year or more is large. Just recently the Midland Refining Co. (subsidiary of the Skelly Oil Co.) acquired the facilities of Cleage & Co. at St Louis for addition to its growing station system.

It is stated that Cosden & Co. is seriously considering the advisability of spending $2,000,000 or more to acquire a direct outlet for a part of its tremendous production of gasoline and oils from its plant at West Tulsa. Waite Phillips is building a group of stations in Missouri to add to those in Oklahoma. Marland is building rapidly in various states and buying out jobbing companies now and then which will fit in with his plans.

CASPER, June 14.—J. C. Diehl, engineer for the Metric Metal Works of Erie, Pa., is spending a few days in Casper. He reports the safe return of H. P. Westcott from Mexico who brought back with him the skins of four mountain lions to add to his trophies of the chase.

CASPER, June 14.—C. J. Hares, chief geologist for the Ohio Oil Co., has returned to Casper after checking up on structures in New Mexico and Arizona for the company.

The sure and quick way to reach prospective buyers for your leases is to insert a classified ad in the Oil Industry Exchange.

At Last—

Gas Tight Roofs, Strong Seams and Unstrained Bottoms, in

HORTONWELDED TANKS

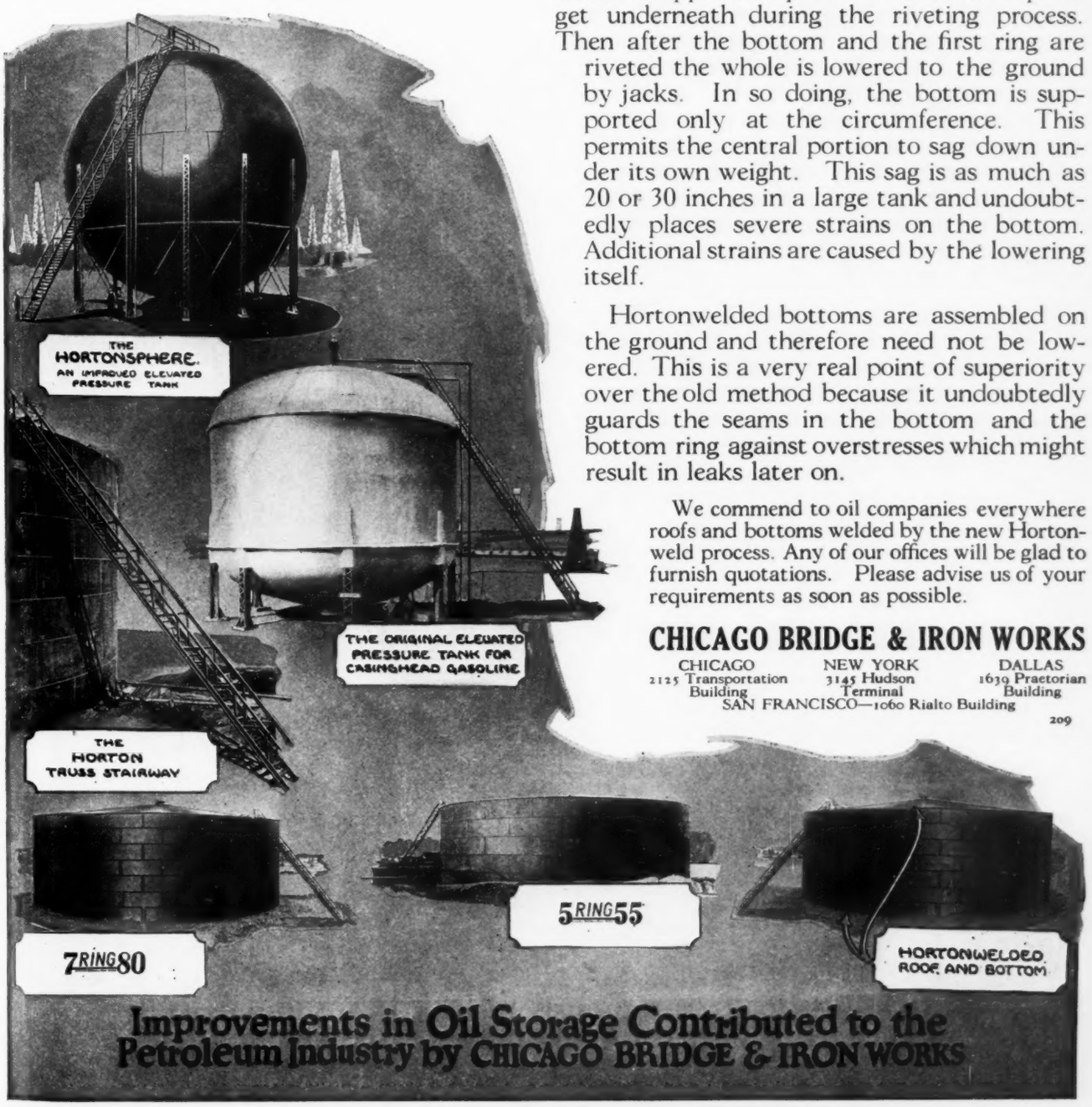
The ideal roof to reduce evaporation to a minimum would be one solid steel plate covering the entire tank and fused to the top angle. This is practically what has been achieved in Hortonwelded roofs, for the roof plates are welded so completely and securely as to give the effect of a solid roof, gas tight throughout.

Our process has reached the point where we can recommend Hortonwelded joints as being superior for roofs and bottoms to riveted joints designed for the same purpose.

In tank bottoms the Hortonweld has made a great improvement. Riveted bottoms have always had to be assembled and riveted up on wooden supports to permit the "bucker-up" to get underneath during the riveting process. Then after the bottom and the first ring are riveted the whole is lowered to the ground by jacks. In so doing, the bottom is supported only at the circumference. This permits the central portion to sag down under its own weight. This sag is as much as 20 or 30 inches in a large tank and undoubtedly places severe strains on the bottom. Additional strains are caused by the lowering itself.

Hortonwelded bottoms are assembled on the ground and therefore need not be lowered. This is a very real point of superiority over the old method because it undoubtedly guards the seams in the bottom and the bottom ring against overstresses which might result in leaks later on.

We commend to oil companies everywhere roofs and bottoms welded by the new Hortonweld process. Any of our offices will be glad to furnish quotations. Please advise us of your requirements as soon as possible.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5 RING 55
HORTONWELDED ROOF AND BOTTOM
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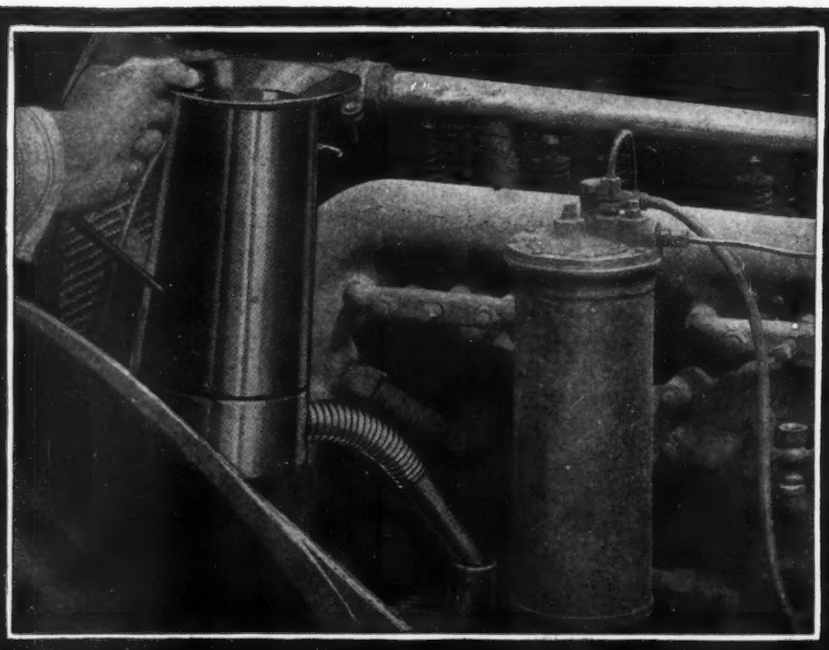

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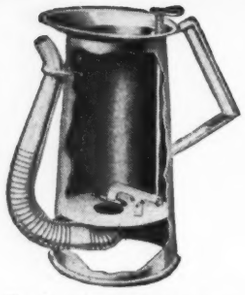

Note how the thumb valve controls the flow of oil. Starts or stops instantly. Not a drop wasted.

The One-Trip Measure

The average car requires just one gallon of oil to fill the crank case. And with the gallon size of the Brookins Measure, that means just one trip to the tank for oil. Saves time for you and your customers.

There are quart and two-quart sizes, too. And all Brookins Measures have the flexible metal nozzle that reaches the most inaccessible oil hole. No oil flows before you are ready. A thumb-valve controls that.

The Brookins is the one best measure for every filling station and garage. Write today for sample and prices.

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Export Office, 11 Broadway, New York City. Cable Address 'Brookins' New York, All Codes Used

State Has No Power To Regulate Interstate Gas

WASHINGTON, June 14.—Certain states, notably Wyoming, which have built up state sentiment favoring the keeping of oil produced within the state, at least until after it is refined, and have even discussed legislation to that effect, will do well to ponder the decision of the United States Supreme Court in the Steptoe case, brief report of which decision was made in these columns last week.

The decision, handed down by the court June 11, held unconstitutional the law passed by the legislature of West Virginia in 1919 giving preference to domestic consumers and industries within the state in the use of gas produced therein.

West Virginia argued that the purport was not to prohibit exportation into Ohio and Pennsylvania, although admitting "it is true that consumers in those states may be incidentally and indirectly affected by the possible reduction in the quantity of West Virginia gas which they have hitherto used."

Attorneys for the producing state contended that West Virginia had not gone beyond its powers in directing that its gas companies should not engage in interstate service until all demands of the state by which they are chartered should be met.

Ohio's Contention

Ohio and Pennsylvania declared the legislation was intended specifically to cut off altogether, or curtail, the supply of West Virginia gas and that the West Virginia statute would result in irreparable injury not only to many thousands of private consumers but to schools, public institutions, government agencies and industries.

Holding that transportation of natural gas across a state border is interstate business, the supreme court declared that "the power to regulate interstate commerce is expressly committed to congress and therefore impliedly forbidden to the States."

The court held that West Virginia by its law had attempted "to regulate the interstate business to the advantage of local consumers." Even considering West Virginia's contention that the natural gas supply is waning and not sufficient to satisfy all local demands, the court says such a situation affords no ground for the assumption by a state of power to regulate interstate commerce. Such power is lodged elsewhere, it expressly declares.

"The gas carried into Pennsylvania and Ohio, respectively, and there supplied to the states and their municipal agencies for strictly public use is not negligible but amounts to billions of cubic feet per year," continued the court.

"It is the fuel with which food is cooked and water heated for thousands of dependents in charitable and penal institutions, with which hundreds of school houses are heated and made comfortable for thousands of children, and with which municipal water works are operated in several cities, notably Cincinnati and Toledo. The heating and other appliances have been adjusted to its use and to make the changes incident to substituting other fuel would involve an expenditure in each state of a very large sum of public money.

"In Pennsylvania the gas is used by 300,000 domestic consumers, caring for 1,500,000 people and in Ohio by 725,000 domestic consumers caring for 3,625,000 people.

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The Pioneer ~~ Alwa[illegible] Leader

COMMON SENSE about COUPLINGS

No. 2

TRIPLEXD hose couplings are not designed expressly to take off again. When the hose and the coupling are right you don't have to take off the coupling except in case of accident.

Mind you, TRIPLEXD couplings can be reattached as easily as any other kind, but--- TRIPLEXD hose is sold on its merit as hose--- not on the fact that the coupling can be quickly and easily reattached.

Are you buying a trick coupling with some hose attached or real hose with a real coupling attached?

St. Louis Stock and Office
1621 Pine Street
Minneapolis Stock and Office
900 Sixth Avenue, S. E.

METAL HOSE & TUBING CO.
INCORPORATED
236 Tillary Street
BROOKLYN, N.Y.

Cleveland Office, 340 Leader-News Bldg.
Western Offices,
558 Howard St., San Francisco
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Main Office and Factory; 236 Tillary St., Brooklyn, N. Y.
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Transfer to Quality Decalcomanie That is Appreciated

The leaders in practically every branch of industry—the oil business in particular—choose

PALM, FECHTELER

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The Transfer that "Goes on Forever"

—For its permanence and steadfast brilliance of color—and because the cost is no more than for the ordinary kind.

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67 Fifth Ave. New York City

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Representatives in All Principal Cities

Announcing

The purchase of another Refinery located at Blackwell, Oklahoma to take care of the increasing demand for high quality refined products.

The plant is now running on Fresh Tonkawa Crude with the daily capacity being increased. General Offices will be maintained at Cushing, Oklahoma.

Send us your inquiry

Cushing Refining & Gasoline Co.

Cushing, Okla.

Box 305 Phone 606 and 611

Rex H. Winget, General Manager

This is where no other natural gas service is available.

To change to other fuel would require and adjustment of heating and cooking appliances at an average cost of more than $100 for each domestic consumer, or an aggregate cost exceeding $30,000,000 in Pennsylvania or $72,500,000 in Ohio."

The court declared natural gas is a lawful article of commerce and its transmission from one state to another for sale and consumption in interstate commerce. A state law, whether of the state in which it is produced or of the state where it is sold, observed the court, "which by its necessary operations prevents, obstructs or burdens such transmission is a regulation of interstate commerce— a prohibited interference. The West Virginia act is such a law."

Going further in its analysis of the statute, the court said:

"Its provisions and the conditions which must surround its operations are such that it necessarily and directly will compel the diversion to local consumers of a large and increasing part of the gas heretofore and now going to consumers in the complainant states, and therefore, will work a serious interference to that commerce."

The court agreed that the pipe line companies are engaged in a quasi-public business, "but it is so in Pennsylvania, and Ohio as well as West Virginia."

Holds Act Unconstitutional

Concluding, the decision stated:

"On full consideration we reach the conclusion that the act is unconstitutional, that the apprehensions of the complainant states respecting the injury which will ensue from its enforcement are well founded and that it obviously will operate most inequitably against those states. In this situation the appropriate decree is one declaring the act invalid and enjoining its enforcement; to dismiss the bills and leave the act to be enforced would be quite inadmissible. If there be need for regulating the interstate commerce involved the regulation should be sought from the body in whom the power resides. Decree for complainants."

In his dissent, Justice Brandeis held that "this court sitting in equity clearly should not lend its aid to enable West Virginia public service corporations to discriminate against West Virginia consumers in the interest of Ohio and Pennsylvania consumers."

Justice Brandeis insisted that no West Virginia company should be left free "to export gas in disregard of the duty not to discriminate against the public in that state." He suggested there should be an investigation to determine how equitably to distribute the gas supply, but said of course the United States could not undertake such an inquiry, and under the circumstances the complaints of Pennsylvania and Ohio should be dismissed."

Justice Holmes who also dissented, held that the gas which West Virginia attempted to regulate had not yet reached interstate commerce at the time the state proposed to limit its exportation, and that West Virginia had the right to provide reasonably for the needs of its citizens with respect to its own products.

Justice McReynolds did not believe there was a controversy presented subject to decision by the court, and held it should refuse to consider the case.

REFINERY-TANK WAGON MARKETS

Mid-Continent Gasolines Softer As Buying Is Halted By Weather

(Complete Refinery Prices, pp. 131-133)

TULSA, June 19.

ALL nature appears to be in league against the Mid-Continent refining industry. Rains and bad roads throughout the consuming territory have delayed the rush of spring business nearly 60 days past the time it usually appears. This week floods have paralyzed refining operations and the shipment of goods.

Kansas and Oklahoma refineries have been hard hit by high waters. Wichita, El Dorado and Arkansas City plants have been forced to close. The Miller Petroleum Co. plant at Humbolt is down. In Oklahoma fewer plants have been flooded but shipments have been delayed from almost every refinery. Railroads are hauling tank cars by circuitous routes over branch lines which necessitate light trains and slow movement.

Some jobbers with rush orders have been forced to buy from other refiners when their shipments were marooned en route. Railroads are making tremendous efforts to get their lines in shape again and are succeeding in spite of continued rains. Trains are moving again although not rapidly and the middle of next week should see every Oklahoma and Kansas refiner able to fill orders promptly.

Market is Chaotic

The enforced cessation of movement to consumers has not had the effect of strengthening the refinery market. It has been in a chaotic state throughout the week. Every day has seen gasolines offered at lower prices than were prevalent the day before.

Some of the largest plants in the state, and some smaller organizations as well, are taking little or no part in the market. Their quotations are held firmly at 13½ cents on Navy for spot or future delivery. Others have shaded their prices daily until it is possible now to buy freely at 11 and 11¼ cents per gallon. Some is offered at that figure for delivery over a somewhat extended period.

Carload marketers have sought to cancel out purchases made at 11 cents during the last day or two, indicating that they have been able to place other orders at even lower figures. There is a feeling of apprehension that the market will fall to even lower levels soon, unless there is an increase of consumption.

No Outside Competition Found

For several weeks there have been refiners in the Mid-Continent who have felt that some other refining area must be in the consuming market, moving goods in competition with them at lower prices. This week several sales managers took a swing through several states in the territory controlled by the Standard Oil Co. of Indiana.

Invariably they discovered that no other group of refiners has been getting the business. With the possible exception during the past two weeks of Shreveport and El Dorado, Ark., refineries, which are really a part of the Mid-Continent. The Arkansas-Louisiana market never got up to the level of Group 3 when price of Navy was raised to 13½ cents recently. Considerable material was sold as a result to carload marketers who were quick to find the weak spots. This gasoline was thrown on the market at the usual brokerage and has been a factor in creating the disturbed situation in Oklahoma and Kansas. Some north Texas gasoline was bought at similar low prices and the freight differential absorbed by the broker who quoted gasoline f. o. b. Group 3. Since north Texas refiners have gotten their 2½ cent differential over Oklahoma the buyers are finding it convenient more and more to play one area against the other in getting low prices.

Despite the lack of competition from outside the real Mid-Continent field refinery sales managers on their trips were unable to sell gasoline. They found that jobbers generally have good stocks on hand and are ready for a rather extensive period of motoring before their tanks will be dry. This is directly contrary to the general opinion which has existed in the market. It was thought that jobbers were nursing dry tanks in the hope of getting lower prices.

Not Lack of Co-operation

With these facts in their possession the sales managers have come to the conclusion that the small response to the distress call of L. V. Nicholas has not been due to a lack of a spirit of co-operation on the part of jobbers but rather to a lack of consumption.

As a matter of fact shipments from Oklahoma and Kansas refineries during the first four months of the year indicate that jobbers have been as thoroughly sold on the idea of a big demand this year as the refiners themselves. Figures compiled by the Bureau of Mines show that sales of Oklahoma and Kansas gasoline maintained a daily average of 3,222,605 gallons from Jan. 1 to April 30. During the same time in 1922 when there was widespread belief in a possible shortage of gasoline sales were maintained at a daily average of only 2,111,320 gallons.

As far as Mid-Continent refiners are concerned, then, sales have been 52.6 per cent greater so far in 1923 than in 1922. That is a greater percentage than was predicted by even the most optimistic analyst who sat down to study automobile registration and building figures at the first of the year.

Production Greatly Stimulated

The fly in the ointment has been the largely increased production of gasoline in the area. During the four months refiners have run a daily average of 223,461 barrels of crude to their stills. They have had higher gravity crude to work on and with more fractionating towers and cracking processes the general average yield of gasoline has been 43.1 per cent. The result has been a daily average production of 4,049,123 gallons of gasoline per day, an increase of 58 per cent over the same period in 1922.

Markets are made in a comparative way. Gasoline sales have not been up with production and the result has been demoralized prices. This fact was brought out in a meeting of the Western Petroleum Refiners Association at Kansas City this week when machinery was put in motion to bring about a further curtailment of operations.

It is generally believed that the next week or so will see a reduction of 10 per cent or more in crude run to stills. It is the opinion of a number that it may be necessary to cut even below that figure if stocks are to be depleted.

All Motor Fuels Weak

No grade of gasoline has been exempt from the lower prices. Competitive 56-56, 450 end point motor fuel is quoted at 10½ and 11 cents. The high gravity gasolines are in little demand and even by blending down with all available naptha refiners operating on the best crude still have a surplus which it is difficult to sell at a satisfactory price. Exporters are showing no new interest in the market. It has been barren even of inquiries from that class of buyers. Some 64-66 is reported to have been sold in scattered cars for as low as 13 cents. The general range of sales are made a half cent higher. Naptha continues scarce and is held to the level of Navy.

Natural gasolines have moved downward in sympathy with other light products. In north Texas some 80-88 compression has sold as low as 7½ cents again. In Oklahoma the average sale this week has been at around 8 cents. Absorption grades are selling a quarter to a half cent higher. Blended gasolines are selling down as low as 10½ cents.

Lubricating Oils Active

Quotations on all grades of Mid-Continent lubricating oils are being well maintained. A tendency to advance quotations has been noted on the part of refiners who have sold so heavily that they are being forced to delay new orders. It was reported yesterday that a large order for bright stock for immediate shipment at a good price was forced to leave Oklahoma to find a plant able to make early delivery.

While some plants report that their stocks of kerosene are virtually exhausted and are asking higher prices there are others who are having more difficulty in selling the goods they have ready for shipment. These plants have been selling at concessions under 4 cents for several days. The market on 41-43 water white appears to be 3⅞ to 4⅛.

Fuel oil has developed some weakness during the past few days as Texas and Arkansas fuel has been entering the Indiana market at low prices. Fuel was bought in small quantities yesterday and today at 90 cents a barrel in sellers cars. Offers of 80 cents in buyers cars were

(Continued on page 133, Col. 3)

TIDAL GASOLINE
FOR POWER
64-66 Straight-run;
68-70 Straight-run;
Natural Gasoline,
Grade A, B, C, D and E;
40-43 Kerosene;
34-38 Gas Oil;
24-26 Fuel Oil
Bulletin No. 104
For winter use the special merit of Tidal Gasoline is recognized by a host of motorists, but it is to be remembered that our product is no less ready in the spring and summer to provide the easy acceleration, the power and mileage which add so much to economy and satisfaction in driving car. This will be a record breaking year in the consumption of gasoline. To derive full benefits from the immense demand, the distributor will, of course, want to handle motor fuel of a quality that will cause customers to come back for more. Tidal Gasoline this season as in the past, will prove a magnet for trade.
WIRE OR WRITE
W. Mabee, M.E.
TIDAL REFINING COMPANY
TIDAL BUILDING — TULSA, OKLAHOMA
Subsidiary of
Tide Water Oil Company, New York
Makers of Veedol Quality Lubricants and Tydol Economy Gasoline

Refinery Markets On Light Oil Products

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas

FOLLOWING are the average market prices on the more important petroleum products in cents per gallon f. o. b. in Oklahoma, Texas refinery and Pennsylvania. These are actual prices at which the bulk of each product is moving from the refineries at the present time. Anyone having knowledge of different prices which have obtained on any considerable quantity of any of the products mentioned will greatly favor us by advising us at once.

GASOLINE AND NAPTHA

PENNSYLVANIA	Prices June 18	Prices June 11	Prices June 4
50-52 Naptha	13 -13¼	13¾-13½	13½-13¾
54 Naptha	13½-13¾	-13¾	14 -14¼
58 Naptha	14 -14½	14¼-14½	14¼-14½
60 Straight-run gasoline	14¾-15¼	15 -15¼	15¼-15½
62 Straight-run gasoline	16 -16¼	16 -16½	16¼-16½
64 Straight-run gasoline	17 -17¼	17 -17¼	17 -17¼
68 Straight-run gasoline	20 -20½	20½-21	20½-21
68-70 Blend, 450 E. P.	-13	13 -13¼	13½-14
60-62 Blend, 450 E. P.	-13	13 -13¼	14 -14¼
62-64 Blend, 450 E. P.	-13	13 -13¼	14 -14¼
66-68 Blend, 440 E. P.	13½-14	13½-14	14¼-14¾
68-70 Blend, 440 E. P.	13½-14	13½-14	14¼-14¾
68-70 Blend, 420 E. P.	-14½	-14½	15 -15¼
OKLAHOMA			
48-50 450 E. P. naptha	11 -11½	12 -12¼	12¼-12¾
50-52 450 E. P. naptha	11¼-11¾	12¼-12½	12¾-13
56-58 450 E. P. gasoline	10½-11	11½-12	12¾-13
55-57 (New Navy), 437 E.P.151 i.b.p	10¾-11¼	11¾-12¼	13 -13¼
58-60 (New Navy), 437 E.P.151 i.b.p	11 -11½	12 -13	13¼-13½
60-62 400 E. P. gasoline	12½-13	13½-14	14¼-14½
64-66 375 E. P. gasoline	13¼-13¾	14¼-15	15¼-15½
68-70 350 E. P. gasoline	15 -15½	15¾-16¼	16¼-16½
NORTH TEXAS			
48-52 450 E. P. naptha	10 -10½	11 -12	12 -12½
56-58 450 E. P. gasoline	10¼-10¾	11½-12½	12½-13
56-58 New Navy gasoline	10¾-11¼	11¾-12¾	12¾-13¼
58-60 New Navy gasoline	11 -11½	12 -13	13 -13½
60-62 400 E. P. gasoline	12½-13	13¼-13¾	13¼-14
64-66 390 E. P. gasoline	13 -13½	13¾-14¼	13¾-14
64-66 375 E. P. gasoline	13¼-13¾	14 -14½	13¾-14¼
LOUISIANA-ARKANSAS			
51-53 460 E. P. naptha	10½-11	11½-12	11½-12
56-58 450 E. P. gasoline	11 -11½	11½-12	12 -12½
58-50 437 E. P. New Navy Gasoline	11½-12	12 -13	12½-13
64-66 400 E. P. Gasoline	15 -16	15 -16	15 -16

NATURAL GASOLINE

OKLAHOMA	Prices June 18	Prices June 11	Prices June 4
Grade A. 72-78 375 E. P., 90% Rec.	8¾- 9¼	10 -11	-11
Grade B, 76-82 375 E. P., 85% Rec.	8½- 9	9 -10	-10½
Grade C, 80-88 350 E. P., 78% Rec.	7¾- 8¼	8½- 9	-10
Grade D, 88-92 350 E. P.	7¾- 8¼	8½- 9	-10
(Motor Natural Gasoline—Blends)			
Grade 1, 58-62 437 E.P., 91% Rec.	10½-11	11½-12	11¾-12
Grade 2, 58-62 450 E. P., 90% Rec.	10½-11	11½-12	11¾-12
Grade 3, 66-64 440 E. P., 88% Rec.	10½-11	11½-12	11¾-12
Grade 4, 66-70 435 E. P., 85% Rec.	10½-11	11½-12	11¾-12
NORTH TEXAS			
Grade A, 72-78 Absorption	8½- 9	10 -11	10 -11
Grade C, 80-88 Compression	7½- 8	8½- 9½	9 -10
(Motor Natural Gasoline—Blends)			
Grade 1, 58-62 437 E. P.	10½-11	11½-12	11¾-12
Grade 2, 58-62 450 E. P.	10½-11	11½-12	11¾-12

BURNING OILS

PENNSYLVANIA			
45 Water White	6 - 6¼	6 - 6¼	6 - 6¼
46 Water White	6¾- 7	6¾- 7¼	6¾- 7
47 Water White	7½- 8	7¾- 8¼	7¾- 8
300 Burning Oil	7¼- 7½	- 8	7½- 8
OKLAHOMA			
41-43 Water White	3⅞- 4½	4 - 4¼	4 - 4¼
42-43 Water White	4 - 4¼	4¼- 4½	4¼- 4½
45-47 Distillate 520 E. P.	6 - 6½	6 - 6½	6 - 6½
46-48 Distillate 500 E. P.	7½- 8	7½- 8	7½- 8
NORTH TEXAS			
40-42 Prime White Distillate	3¼- 3½	3½- 3¾	3¼- 3½
41-43 Water White Kerosene	3¾- 4	3¾- 4	3½- 3¾
LOUISIANA-ARKANSAS			
41-43 Water White Kerosene	4 - 4¼	4 - 4¼	4 - 4¼

(Lubricants and Heavy Oils Continued on page 133)

Pennsylvania Market Holds Steady In Face Of Cut In Eastern Crudes

(Complete Refinery Prices, pp. 131-133)

CLEVELAND, June 18.—The western Pennsylvania refinery market failed to react today to the reduction in prices of eastern crude oils and refiners were uncertain whether an adiustment of prices for finished goods would follow. It has been the belief of most refinery operators that $3 crude oil has been largely discounted during the general weakness that has enveloped the market in the last two or three months.

Quotations on 58-60 gasoline are ¼ cent lower than a week ago but this reduction came last week before the cut in crude. A fair sized volume of gasoline is being moved under contracts but the spot market has alternating times of activity and quite. Higher gravity motor fuels also have a spotty demand and the market outside of demand for use in the industrial arts, has been comparatively quiet.

The movement of kerosene continues good but prices are low. Fuel oil is moving to steel mills in good sized quantities and the market is stronger. Whereas a week ago, considerable fuel was obtainable at 5 cents a gallon refiners reported most sales at 5¼ with 5½ the ruling price in the Pittsburgh district. One plant in the Oil City district moved eight carloads at 5½ and 5¾ cents.

Neutral oils are soft. Futher weakening of prices was evident. The non-viscous neutrals are meeting with sufficient demand to hold the price structure steady, although the recent curtailment of operators by the New England textile mills caused a slump in demand. Operations to meet fall and winter requirements in that industry, are quickening and the relatively small amount of spindle oils available should find a ready market.

Cylinder stocks continue to have "on and off" days. Stocks of steam refined goods are said to be slowly accumulating but considerable goods are purchaseable now and then at low prices when a refiner wishes to clear out his stocks. Others are content to hold out for higher prices. This has led to a wider range in quotations than is usual.

Bright stocks were firmer today but there was little change in other filtered stocks.

Prices of wax also showed a little more strength as a few good orders were placed. One shipment of 25 tons of 124-126 A. m. p. white crude scale at 3⅛ cents New York was made but this really was above the market.

Kentucky

Gasoline prices in Kentucky today are ½ cent a gallon lower than a week ago. A ¼-cent reduction was made last week and another today following the cut in the price of eastern crude oils. This brings 58-60 down to 13¼ cents; 60-62 400 end point 15 cents ½ 62-64 15½ cents; 64-66 16 cents; 66-68 16¾ cents, and 68-70 17½ cents. Prices at plants along the Ohio river run about 1 cent a gallon higher.

Current output of gasoline is being moved by Kentucky refiners but no inroads are made on the stocks that accumulated during last winter.

Kerosene movements are holding up and 6 cents was the general price of 41-43 water white. Fuel oil was strong and central Kentucky plants held the price for 24-26 at 4 cents as against 3¾ and 4 cents a week ago. At the river the price was 4¼ cents. Gas oil is less active and was obtainable at 4½ cents in central Kentucky, and 5 cents at the river.

Stores of bright stocks have been reduced and prices are being maintained at the same level as of the last two months. Inquiries for other filtered goods are increasing and several sizable sales have been made.

WELDCO TANKS READY FOR IMMEDIATE DELIVERY

WE carry in stock ready for immediate delivery Weldco Truck Tanks in a range of standard sizes, from 300 gallons up. Any number or arrangement of compartments can be furnished in elliptical and semi-rectangular types. An order received from you today will be on its way tomorrow, providing specifications are standard. The tank should be in service in a week or ten days from the time the order is placed, depending on location. Weldco Tanks are shipped complete ready to mount on the chassis for instant service.

Weldco Truck Tanks are now giving satisfaction in every state in the country. The exclusive funnel drain device of Weldco Tanks has won instant recognition from large and small oil interests everywhere. The days of short measure were forever ended when Weldco Tanks were announced. Due to gravity and the funnel shape of the drain outlet of each compartment it is as impossible to retain liquid in a Weldco Tank as it would be in a funnel.

If you will send us your name and address we will mail you complete specifications, illustrated literature and our latest price list. State capacity of tank, make of truck and year.

THE
YOUNGSTOWN WELDING CO.
YOUNGSTOWN OHIO

One Minute Movie of a Weldco Order

Refinery Markets On Lubricants, Heavy Oils

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas

FOLLOWING are the average market prices on the more important petroleum products in cents per gallon f. o. b. in Oklahoma, Texas refinery and Pennsylvania. These are actual prices at which the bulk of each product is moving from the refineries at the present time. Anyone having knowledge of different prices which have obtained on any considerable quantity of any of the products mentioned will greatly favor us by advising us at once.

NEUTRAL OILS

PENNSYLVANIA	Prices June 18	Prices June 11	Prices June 4
(Viscous Test 70)			
200 Vis. No. 3 Assoc. Filt	32 -33	32½-33	32½-33
180 Vis. No. 3 Assoc. Filt	29½-30½	30½-31	30 -31
150 Vis. No. 3 Assoc. Filt	26 -27	26½-27	27 -27¼
(Non-Viscous)			
34 350-360 Flash	8¾- 9¼	8¾- 9	8- 8¼
36 Miners Neutrals 300-305 Flash	7¾- 8	- 7½	- 7¾
OKLAHOMA			
(Viscous Test 100)			
70 Vis. at 100°F. No. 2 Color	5 - 5½	5 - 5½	5 - 5½
70 Vis. at 100°F. No. 2½-3 Color	4¾- 5¼	4¾- 5¼	4¾- 5¼
100 Vis. at 100°F. No. 2 Color	6½- 7	6½- 7	6½- 7
100 Vis. at 100°F. No. 2½-3 Color	6 - 6½	6 - 6½	6 - 6½
200 Vis. at 100°F. No. 3 Color	12¾-13¼	12¾-13¼	12¾-13¼
200 Vis. at 100°F. No. 5 Color	11¼-11¾	11¼-11¾	11¼-11¾
240 Vis. at 100°F. No. 3 Color	14¾-15¼	14¾-15¼	14¾-15¼
240 Vis. at 100°F. No. 5 Color	13¼-13¾	13¼-13¾	13¼-13¾
280 Vis. at 100°F. No. 4 Color	16½-17	16½-17	16½-17
280 Vis. at 100°F. No. 6 Color	14½-15	14½-15	14½-15
300 Vis. at 100°F. No. 6 Color	16¾-17¼	16¾-17¼	16¾-17¼
SOUTH TEXAS			
(Viscous Test 100; cold test 0)			
100 Vis. No. 2 Color Unfilt. Pale	7 - 8	7 - 8	7 - 8
150 Vis. No. 2½ Color Unfilt. Pale	9 -10	9 -10	9 -10
200 Vis. No. 3 Color Unfilt. Pale	10½-11½	10½-11½	10½-11½
300 Vis. No. 3 Color Unfilt. Pale	14 -15	14 -15	14 -15
500 Vis. No. 3½ Color Unfilt. Pale	16 -17	16 -17	16 -17
750 Vis. No. 4 Color Unfilt. Pale	24 -25	24 -25	24 -25
200 Vis. No. 2 Filt. Pale	-24	-24	-24
300 Vis. No. 2 Color Filt. Pale	-28	-28	-28
500 Vis. No. 2½ Color Filt. Pale	-23	-23	-23
750 Vis. No. 2½ Color Filt. Pale	-41	-41	-41
200 Vis. No. 5½ Color Red Oil	9 -10	9 -10	9 -10
300 Vis. No. 5½ Color Red Oil	11½-12	11½-12½	11½-12½
500 Vis. No. 6 Color Red Oil	14 -15	14 -15	14 -15
50 Vis. No. 6 Color Red Oil	22 -23	22 -23	22 -23

CYLINDER OILS

PENNSYLVANIA	Prices June 18	Prices June 11	Prices June 4
600 Steam Refined	11½-12	11¾-12	12 -12½
635 Steam Refined	13 -14	13 -13¼	13¾-14
650 Steam Refined	14 -15	13¾-14¼	14½-15
600 Flash	17½-18	17½-18	17½-18
600 Warren E	17¼-17½	17½-17¾	17¾-18
600 Oil City E	15¼-15¾	15½-16	-15¾
600 Medium Filtered (D)	22 -23	22 -22½	-22
Cold Test Stocks (bright filtered)	36 -38	35 -37	36 -38
Cold Test Stocks (dark filtered)	33 -35	32 -34	33 -35
Black Oil	5½- 8	5¾- 7	5¾- 7
OKLAHOMA			
Bright Filtered Stock	27 -29	27 -29	27 -29
Medium Filtered Stock	16 -17	16 -17	16 -17
600 Steamed Refined Olive Green	8 - 9	8 - 9	8 - 9
600 Steam Refined Dark Green	6½- 7	6½- 7	6½- 7
Black Oil	4¼- 5	4¼- 5	4¼- 5

WAX

PENNSYLVANIA			
(Per Pound New York)			
122-124 White Crude Scale	2¾- 2¾	- 2¾	2¾- 2¾
124-126 White Crude Scale	2⅞- 3	2¾- 3	2⅞- 3
OKLAHOMA			
(Per Pound Group 3)			
124-126 White Crude Scale	2¾- 2½	2¾- 2½	2¾- 2½

FUEL OIL

PENNSYLVANIA			
36-40 Fuel Oil	5¼- 5½	5 - 5¼	5 - 5¼
OKLAHOMA			
38-40 Straw Distillate	3 - 3⅛	3⅛- 3¼	3¼- 3½
36-38 Straw Distillate	2⅞- 3	2⅞- 3⅛	3⅛- 3¼
32-36 Gas Oil (Gal.)	2½- 2¾	2¾- 2⅞	2¾- 2⅞
24-26 Fuel Oil (bbl.)	.95-1.00	1.00-1.05	1.05 -1.10
Fuel Oil, buyers, cars (bbl.)	85- .95	.95-1.00	.95 -1.00
Roads Oils 50-60 Asphaltic Content	1.25-1.35	1.25-1.35	1.25 -1.35
Roads Oils 60-70 Asphaltic Content	1.30-1.40	1.35-1.40	1.35 -1.40
NORTH TEXAS			
38-40 Straw Distillate	2¾- 3	3¼- 3½	3 - 3¼
32-36 Gas Oil (gal.)	2½- 2¾	2¾- 3	2¾- 2⅞
24-26 Fuel, per bbl	.85- .90	.90-1.00	.85- .95
South Texas Fuel	1.60-1.75	1.60-1.75	1.60-1.75
South Texas Gas Oil	3¾-4	3¾-4	3¾-4
LOUISIANA-ARKANSAS			
34-36 Gas Oil (Gal.)	3 - 3¼	3 - 3¼	3 - 3¼
24-26 Fuel Oil (bbl.)	.85-1.00	.95-1.05	.95-1.10

Walter Willard Chosen Secretary Of A. O. M. A.

Staff Special

CHICAGO, June 18.—Walter G. Willard, formerly field secretary of the Western Petroleum Refiners Association with headquarters in Kansas City, was chosen secretary of the American Oil Men's Association, at a meeting of the directors here last week. He will take on July 1 the position left by Melville C. Hill.

Mr. Willard lives in Chicago. Although he worked directly under John D. Reynolds, secretary of the Western Petroleum Refiners Association, he was on the outside the greater part of the time. Office affairs were handled by Mr. Reynolds who lived in Kansas City and it was convenient for the field secretary to make his home in Chicago.

Under press of personal business and urge from officials of the Sweney Gasoline & Oil Co., his former employer in Peoria, Ill., Mr. Hill resigned more than a week ago. In Peoria he will resume the practice of law and active service with the Sweney company.

Mr. Willard was active in the work of organizing the American Oil Men's Association. When the members were preparing their first convention, Mr. Willard served them. A little later he suffered a broken leg. He resigned from the refiners' association June 1.

TULSA, June 16.—The final date for changing brake power installations on existing tank cars to comply with current regulations has been postponed from July 1, 1923, to July 1, 1924. News of the extension of time is given in Circular DV-279 of the mechanical division of the American Railway Association.

(Continued from page 129)

not accepted. The general range of the market is 95 cents to $1 per barrel in sellers cars and 10 cents less if cars are furnished.

Both gas oil and distillates have been a drug on the market recently. It is difficult to sell 38-40 light straw distillate for more than 3 cents a gallon. Gas oil is sluggish and selling at as low as 2½ cents on dark with light straw commanding 2¾ usually.

Gulf Coastal Water Shipments, May Compared With April

(All figures in barrels of 42 gallons)

Company—Port	Coastwise Refined April	Coastwise Refined May	Export Refined April	Export Refined May
Standard of Louisiana, Baton Rouge	423,011.00	543,745.00	831,423.00	464,829.00
The Texas Co., Port Arthur	1,092,575.00	1,017,281.00	414,732.00	484,762.00
Gulf Refining Co., Port Arthur	2,075,549.22	2,902,716.01	396,114.47	256,368.25
Magnolia Petroleum Co., Beaumont	576,382.66	564,531.64X	.....	.....
Sinclair Refining Co., Houston	.....	.....	95,000.00'	95,000.00'
Galena Signal Oil Co., Houston	105,000.00	82,000.00	36,000.00	50,000.00
Union Petroleum Co., Westwego, La	.....	.....	130,970.00	138,856.00
Deepwater Oil Refineries, Houston	25,000.00	.....	25,000.00	.....
Totals	4,297,517.88	5,110,273.65	1,929,239.47	1,489,815.25

	Coastwise Crude		Export Crude	
Standard of Louisiana, Baton Rouge	224,687.00	69,818.00	.....	.....
The Texas Co., Port Arthur	380,142.00	387,206.00	30,958.00	.....
Gulf Refining Co., Port Arthur	212,282.00	71,866.11	.....	.....
Magnolia Petroleum Co., Beaumont	85,012.30	76,271.00X	.....	.....
Sun Oil Company, Sabine Pass	274,553.00	316,621.27	.....	.....
Humble Oil & Refining Co. Texas City	760,394.00	857,279.00XX	.....	.....
Vacuum Oil Co., Texas City	138,887.00	283,836.47	.....	.....
Humphreys Pure Oil Pipe Line Co., Smith's Bluff	.....	25,955.97	.....	.....
Totals	2,075,957.30	2,088,853.82	30,958.00	.....

NOTES:
X—Magnolia makes no distinction in reports between coastwise and export shipments.
XX—351,846 barrels Ranger crude; 455,544 barrels Mexia crude; and 50,089 barrels West Columbia crude.
'—Estimated figures.

Gasoline Continues To Accumulate; Even The Flood Causes No Flurry

Staff Special

CHICAGO, June 16

SCHOOLS and colleges are closing all over the United States this week, and that event marks the official beginning of vacation time. The first month of summer nearly past, the motoring season is on, though undoubtedly not at its peak. Now jobbers have begun to look forward to the touring season, which is vacation time for the whole country. When the younger members of the family are home from school, the car always does more miles per day, and all of that may be joyous news to the jobbing trade but there seems to be little in it to stimulate courage in the heart of the refiners of the Mid-Continent.

Of course, the refiners want to move their stocks of gasoline. Some of them are willing to move part of their goods at almost any price commensurate with the cost of manufacture and the cost of crude. Others are holding out of the market for the economic margin in 13½ cents but most of these firm ones can count their sales on the fingers of one hand. Refiners who have held ranks and tried to live up to their resolutions not to sell below cost are feeling pretty much like the jobber who bought several cars of 13½ cent emergency gasoline last week to save the market. Both parties feel as if they had wasted their good manners.

Campaign Beneficial

The 50 or more jobbers, whose loyalty to their industry actuated them to buy gasoline at 13½ cents last week when it was possible to obtain it at 12 cents, realize that for the time being in many cases, they have a fair margin of profit any way and they are not actually hurt by contributing the difference to a costly effort to relieve the refiners' storage. The refiners who have refused to dump their goods on the market at buyers' prices realize too that there is only a little gasoline moving at any price, and after all they have not lost a great deal of spot business.

Group 3 refiners are finding it increasingly harder to stay in business as days go by, without shipping more than current runs. They agree that the general tank wagon price level in Standard Oil Co. of Indiana territory is not high in comparison with the price of Mid-Continent crude. The present tank wagon price makes a margin available which, under some circumstances might be split equitably between refiner and jobber and permit both to do well. But inertia on the part of the buyers, pressure of stocks and desire to remain in business for the summer consumption have caused many refiners to forget about the profits they might be making on today's market.

Kerosene Movement

Marketers and refiners in Chicago with outlets west of the Mississippi river, outside of the flooded areas, have felt a slightly improved call for refined oil recently. Two or three good sized orders came in from the west late in the week, but they were not enough to budge the price away from 4 cents, where it has stuck faithfully for weeks.

BULLETIN

CHICAGO, June 18.—High water, lowering gasoline stocks and increased motoring over the week end, has been reflected in the Chicago gasoline market. Whereas a few quotations as low as 10¾ cents were made Saturday on Navy, the lowest quotation today was 11 cents. The volume of goods moving through the Chicago spot market is larger also. Other products are about the same.

In Indiana territory, east of the Mississippi where there has been a great deal of rain, kerosene is a dead item. There appeared to be plenty of the goods to meet the needs of scattered buyers at the prevailing price. Gas oil is almost without a market too.

Fuel oil prices are still ranging between 95 cents and $1. The higher range may be a little more popular in the trade this week than the low one, due to floods, but there is some cheap fuel available in spite of the flood. Refining plants in Oklahoma and Kansas have not been storing much fuel oil recently because they have contracts to cover their minimum output. Nevertheless, with supply pretty well taken up, spot demand has not developed strength enough in a time of disrupted rail movements to advance the price. Refineries in Group 3, not themselves endangered by water, have been obliged to overcome some shipping difficulties.

Under normal conditions, even at other times of the year than early summer, a flood like the one now annoying several Group 3 refiners would have been a strong bullish element in the market. On this occasion it did not cause a ripple of excitement; only sympathy for the men whose property was being destroyed. Jobbers ordering out gasoline on marginal contracts, from refiners who could not ship on account of the flood had their needs supplied from some more fortunate plant, and the car was applied on contract. The refiners simply traded among themselves, such business as they could not accept first hand.

In a few consuming sections of the country, there was reported to be a temporary shortage of gasoline but such emergencies did not last long. The refiners never profited any by this spotted demand, because the flood, while it cut off supply in one or two neighborhoods for a while, also threw a damper on consumption in other areas almost as large.

Export Market Dead

There are oil men in close touch with the marketing and storage situation of today who claim that a firm bid of 10 cents for Navy gasoline for export in a closed deal would probably buy a good quantity of material today. However, they declare that stocks in Europe are well filled for the time of year, partly with California gasoline, and that this storage condition and the condition of foreign exchange, exclude hope of relief from the eastern hemisphere.

Rain Still Feature Of Weather Reports

CHICAGO, June 17.—For the region of the Great Lakes, the Ohio valley and Tennessee, and the upper Mississippi and lower Missouri valleys, considerable cloudiness with occasional showers may be expected during the week of June 18 to 23, according to the government outlook from Washington. The first half of the week will be fairly warm but the latter half cooler.

Rain fell almost daily last week at points in the north and east. The first two days of the week rain fell almost everywhere in the United States east of the Rocky Mountains. Showers were light and scattered Wednesday and Thursday. But on Friday and Saturday the northeast quarter of the country again was drenched. The continuity of rainfall in the east, however, did not raise the gross precipitation to the equal of rainfall in Kansas and vicinity during the few days immediately before.

For seven days before Wednesday, June 13, the precipitation was almost continuous in Kansas and surrounding states. The total rainfall exceeded four inches over most of eastern Kansas, northeastern Oklahoma and a small part of Missouri. In Wichita, Kan., 9.4 inches of rain fell.

The week's waterfall was heavy also in Indiana, Illinois, Iowa and Kentucky, which until recently have been the most consistent consumers of gasoline in the Middle West this spring. The storms not only cut off supply from some sections but diminished demand considerably elsewhere.

Trapshooter Plant Sold

WICHITA, June 16.—The Industrial Refining Co. has purchased the Trapshooters refining plant, of El Dorado, Kan., from the St. Louis Oil & Refining Co., it became known Wednesday.

The purchasers have announced a program of extension and improvement, which, when completed, will give the plant a daily crude capacity of 1500 barrels. It is planned to install several Dubbs units to obtain a greater gasoline recovery, several stills are to be rebuilt, and a new re-run still added.

The deal is reported to have involved $100,000.

The officers of the Industrial are Clinton H. Montgomery, president; Fred Campbell, superintendent; and H. R. Keplinger, office manager.

KANSAS CITY, June 13.—In order that there may be more understanding of each other's problems and a greater harmony between the two branches of the oil industry members of the Western Petroleum Refiners Association will attend all future state jobbers meetings in the middle west. Decision to send at least two men to each state meeting was reached at a meeting of the board of directors and membership here yesterday.

Efforts are being made by the association to increase its membership by the addition of refiners in the Arkansas and north Louisiana area. A committee was appointed for the membership campaign as follows: H. T. Ashton, Roy B. Jones, Elliott Jones, Frank M. Smith, H. A. Hassan, Jr., and W. B. Hamilton.

Tank Wagon, Service Station Markets
Gasoline and Kerosene

BELOW are given in cents a gallon, the tank wagon price of gasoline without the special taxes levied against motor fuels by many states, the amount of the state taxes, the total tank wagon price with tax added in, and the service station or retail price of gasoline as quoted in the various Standard Oil marketing territories. The right hand column is the tank wagon price of kerosene. By tank wagon price is meant the price to resale agents or dealers. Usually this price does not apply to sales to consumers from tank wagons.

S. O. NEW JERSEY TERRITORY

	Gasoline				Oil
	T.W. June 18	Tax June 18	Total June 18	S.S. June 18	T.W. Jun 18
Atlantic City,*N. J.	21.5	0	21.5	24.5	13
Newark, N. J.	21.5	0	21.5	24.5	13
Annapolis, Md.	21.5	1	22.5	24.5	13
Baltimore, Md.	20.5	1	21.5	25.5	12
Cumberland, Md.	22	1	23	25	14
Washington, D. C.	21	0	21	23	12.5
Danville, Va.	22.5	0	22.5	24.5	14
Norfolk, Va.	20	0	20	22	12
Richmond, Va.	21.5	0	21.5	25.5	12.5
Roanoke, Va.	22.5	0	22.5	24.5	14
Petersburg, Va.	22.5	0	22.5	24.5	13.5
Charleston, W. Va.	21	0	21	23	12.5
Clarksburg, W. Va.	21	0	21	23	13.5
Keyser, W. Va.	22	0	22	24	14
Parkersburg, W. Va.	20	0	20	22	11
Wheeling, W. Va.	21	0	21	25	12.5
Charlotte, N. C.	21	3	24	26	13.5
Hickory, N. C.	21.5	3	24.5	26.5	14
High Point, N. C.	21	3	24	26	14
Mt. Airy, N. C.	21	3	24	26	13.5
Salisbury, N. C.	21.5	3	24.5	26.5	14
Charleston, S. C.	19	3	22	24	11.5
Columbia, S. C.	21	3	24	26	13.5

S. O. NEW YORK TERRITORY

*New York City	21.5	0	21.5	24	14
Albany, N. Y.	21.5	0	21.5	24	13
Buffalo, N. Y.	21.5	0	21.5	24	14
Rochester, N. Y.	20.5	0	20.5	23	13
Syracuse, N. Y.	21.5	0	21.5	24	12
Boston, Mass.	21.5	0	21.5	24	12

*In steel barrels.

ATLANTIC REFINING TERRITORY

Pittsburgh, Pa.	21	0	21	25*	14
Philadelphia	21	0	21	25*	14
Scranton, Pa.	17	0	17	21*	14
Dover, Del.	21	1	22	25	14
Wilmington, Del.	21	1	22	25	14
Providence, R. I.	21.5	0	21.5	24	14
Springfield, Mass.	21.5	0	21.5	24	14
Worcester, Mass.	21.5	0	21.5	24	14
Hartford, Conn.	21.5	0	21.5	25*	14
New Haven, Conn.	21.5	0	21.5	25*	14
Boston, Mass.	21.5	0	21.5	24	14

Six New England cities names are the Atlantic's chief marketing points in New England. S. O. New York markets there.

*Pennsylvania and Connecticut taxes of 1 cent a gallon on gasoline are collected directly from consumer and paid to the state by the dealer. The service station here quoted contains the tax.

S. O. OHIO TERRITORY

All Ohio points	21	0	21	23	13

S. O. KENTUCKY TERRITORY

Lexington, Ky.	22	1	23	25	14
Louisville, Ky.	21	1	22	24	13
Covington, Ky.	21	1	22	24	13
Jackson, Miss.	18.5	1	19.5	21.5	12.5
Natchez, Miss.	18	1	19	21	12.5
Vicksburg, Miss.	18	1	19	21	12.5
Birmingham, Ala.	19	2	21	23	14.5
Mobile, Ala.	18	2	20	22	13.5
Montgomery, Ala.	19	2	21	23	15
Atlanta, Ga.	20	1	21	23	15
Augusta, Ga.	20	1	21	23	14
Macon, Ga.	20	1	21	23	14.5
Savannah, Ga.	18	1	19	21	13
Jacksonville, Fla.	18	1	19	21	13
Miami, Fla.	21	1	22	24	13.5
Tampa, Fla.	18	1	19	21	13
Pensacola, Fla.	18	1	19	21	13.5

S. O. LOUISIANA TERRITORY

Camden, Ark.	17.5	3	20.5	22.5	12
Little Rock, Ark.	17.5	3	20.5	22.5	12
West Helena, Ark.	17.5	3	20.5	22.5	12
Alexandria, La.	16.5	1	17.5	19.5	12
Baton Rouge, La.	15	1	16	18	10.5
Lake Charles, La.	16.5	1	17.5	19.5	12
New Orleans, La.	15.5	1	16.5	18.5	11
Shreveport, La.	16.5	1	17.5	19.5	12
Bristol, Tenn.	19	2	21	23	14.5
Chattanooga, Tenn.	17.5	2	19.5	21.5	13.5
Knoxville, Tenn.	18.5	2	20.5	22.5	14
Nashville, Tenn.	17.5	2	19.5	21.5	13.5
Memphis, Tenn.	17	2	19	21	13

MAGNOLIA PETROLEUM TERRITORY

	Gasoline				Oil
	T.W. June 18	Tax June 18	Total June 18	S.S. June 18	T.W. June 18
Muskogee, Okla.	17	0	17	20	9
Oklahoma City	16	0	16	18	9
Tulsa, Okla.	15	0	15	18	11
Fort Smith, Ark.	17	3	20	23	11
Little Rock, Ark.	17.5	3	20.5	22.5	12
Texarkana, Ark.	17	3	20	23	11
Dallas, Tex.	17	1	18	21	12
El Paso, Tex.	18	1	19	22	13
Fort Worth, Tex.	17	1	18	21	12
Houston, Tex.	16	1	17	21	12
San Antonio, Tex.	12	1	13	16	11

S. O. INDIANA TERRITORY

Chicago	20	0	20	22	11.5
Decatur, Ill.	20.8	0	20.8	22.8	12
East St. Louis, Ill.	19.45	0	19.45	21.7	11.1
Joliet, Ill.	20	0	20	22	12.2
Peoria, Ill.	20.8	0	20.8	22.8	12
Quincy, Ill.	20.6	0	20.6	22.6	11.8
Evansville, Ind.	19.6	2	21.6	23.6	12
Indianapolis, Ind.	19.8	2	21.8	23.8	12.2
South Bend, Ind.	20	2	22	24	12.4
Detroit, Mich.	21.4	0	21.4	23.4	12.7
Grand Rapids, Mich.	21.3	0	21.3	23.3	12.6
Saginaw, Mich.	21.5	0	21.5	23.5	12.8
La Cross, Wis.	21.8	0	21.8	23.8	12.9
Madison, Wis.	20.9	0	20.9	22.9	12
Milwaukee, Wis.	20.6	0	20.6	22.6	11.7
Duluth, Minn.	21.8	0	21.8	23.8	13.1
Mankato, Minn.	21.4	0	21.4	23.4	12.9
Minneapolis, Minn.	21.5	0	21.5	23.5	13.1
Davenport, Ia.	21.1	0	21.1	23.1	12.4
Des Moines, Ia.	21.1	0	21.1	23.1	12.4
Sioux City, Ia.	20.7	0	20.7	22.7	12
Kansas City, Mo.*	19.5	1	20.5	22.5	10.8
St. Joseph, Mo.	20.9	0	20.9	22.9	11.7
St. Louis, Mo.	20.2	0	20.2	22.5	11.5
Fargo, N. D.	24.3	0	24.3	26.3	15
Grand Forks, N. D.	25.2	0	25.2	27.2	14.9
Minot, N. D.	26.3	0	26.3	28.3	17
Huron, S. D.	22.6	1	23.6	25.6	13.6
Pierre, S. D.	22.6	1	23.6	25.6	13.6
Wichita, Kans.	20.4	0	20.4	22.4	11.3
Bartlesville, Okla.	19.5	0	19.5	21.5	10.4

*Kansas City tax of 1 cent is imposed by city.

S. O. NEBRASKA TERRITORY

Crawford, Neb.	19.25	0	19.25	†	13.25
Omaha, Neb.	20.5	0	20.5	22.5	11.75

CONTINENTAL OIL TERRITORY

Denver, Colo.	18	1	19	21	13.5
Glenwood Springs, Colo.	22	1	23	†	17.5
Pueblo, Colo.	18	1	19	21	13.5
Basin, Wyo.	19	1	20	†	14
Casper, Wyo.	17	1	18	20	12
Cheyenne, Wyo.	19	1	20	22	14
Cody, Wyo.	20	1	21	†	15
Lander, Wyo.	19	1	20	†	14
Billings, Mont.	20.5	2	22.5	24.5	15.5
Butte, Mont.	22	2	24	26	16
Great Falls, Mont.	22	2	24	26	17
Helena, Mont.	22	2	24	26	17
Miles City, Mont.	21.5	2	23.5	25.5	16.5
Ogden, Utah	21.5	2.5	24	26	16.5
Salt Lake City, Utah.	21.5	2.5	24	26	16.5
Boise, Ida.	22.5	2	24.5	26.5	19
Albuquerque, N. M.	22.5	2	23.5	25.5	15.5

†Points at which Continental has no service stations.

S. O. CALIFORNIA TERRITORY

Phoenix, Ariz.	19.5	1	20.5	23.5	21.5
Los Angeles, Cal.	16	0	16	19	15.5
Fresno, Cal.	16.5	0	16.5	19.5	17.5
San Francisco	16	0	16	19	15.5
Reno, Nev.	19.5	2	21.5	24.5	19
Portland, Ore	17	3	20	23	16.5
Seattle, Wash	17	1	18	21	16.5
Spokane, Wash.	20.5	1	21.5	24.5	20.5
Tacoma, Wash.	17	1	18	21	16.5

Week's Price Changes In Tank Wagon Market

TULSA, June 14.—The Magnolia Petroleum Co. June 12 reduced the tank wagon and service station prices of gasoline at San Antonio 5 cents and the service station price at Oklahoma City 1 cent.

* * *

SCRANTON, PA., June 15.—The tank wagon price of gasoline at Scranton is 17 cents while the rest of the state is 21 cents. A price war has been raging here for about three months and its end is not in sight.

* * *

ROCHESTER, N. Y., June 15.—The tank wagon price of gasoline at Rochester is 20½ cents, 1 cent below the rest of New York state territory.

North Texas Refinery Products Fall Sharply

(Complete Refinery Prices, pp. 131-133)

DALLAS, June 16.—North Texas refinery markets have weakened on all products offered for sale with the exception of kerosene. This product has been held to prices prevalent a week ago, chiefly to conserve clean cars for motor fuel movement.

Movement to domestic buyers has slowed down both to the southeast and to Indiana territory during the week as the result of heavy rains in various parts of the consuming area. Refiners have been bidding against each other in seeking business and the result is a market a full cent below that prevailing at the close of business on June 9.

Navy gasoline is offered fairly freely at 11 to 11½ cents a gallon from some plants. Others are still holding to 13 and 13½ cents hoping that distress stuff will soon be moved out and the market resume its former level.

Refiners in this area have reduced their runs to a still lower level during the past month. It seems likely now that no effort will be made generally to build up the scale of operations at least for the present.

High gravity gasoline grades are weak as the result of the absence of export demand. Some 64-66 gravity gasoline has moved this week at as low as 13 cents a gallon. The 375 end point grade is selling up to 13¾ cents.

Refiners have been buying more natural gasolines but prices have slipped another cent per gallon as manufacturers have sought a larger outlet. Compression grades are quoted at 7½ to 8 cents. Blended gasolines are slow and prices weak at 10½ to 11 cents.

Magnolia Petroleum Co. (subsidiary of the Standard Oil Co. of New York) has entered the market here by establishing a separate department to sell to jobbers and carload marketers. Thus far the material offered has been largely fuel oil. The new competition has served to weaken prices on fuel to 85 and 90 cents a barrel. Some material is moving to Standard of Indiana territory at these prices in direct competition with Group 3 fuel which is still held to higher price levels.

Heavy Offerings Of Gasoline Cause Check In Buying On Export Market

By Special Correspondent

NEW YORK, June 18

EXPORT demand for the various petroleum products suffered a check last week. Heavy offerings of gasoline tended to weaken the market considerably and only one bulk sale came to the surface last week. Kerosene also weakened considerably, while bunker oil is less steady than it was during the previous week.

The New York tank car market for gasoline has softened considerably; in fact the general situation is quite the reverse of a week ago. California gasoline is being offered around freely at 13½ cents a gallon for export while in one or two directions a price of 12½ cents was named. One big refiner reported the sale of 55,000 barrels of new Navy and 64 gravity gasoline to a continental European buyer, to be shipped in the near future. Details were not made public. Cased gasoline has been a very flat, listless affair of late, and only two orders, calling for 10,000 cases each, came to light.

Far Eastern, as well as British, buyers are manifesting an academic interest in the domestic situation but are not wont to support any of the products at present and are purchasing in a purely hand-to-mouth character. The belief prevails in these parts that crude oil will be forced into lower ground during the near future; in fact sentiment in local oil circles is of a decidedly bearish nature and it is not likely that much export buying will develop until the present wave of pessimism and weakness is dispelled. There is a little gasoline being moved into export channels on consignment but the outlet is not as active as had been expected.

Kerosene Market Weak

Conditions in the kerosene market are far from favorable from the refiner's standpoint and it was reported that a sale had been closed for 140,000 barrels of kerosene for nearby shipment out of the Gulf at 4½ cents for prime white and 5½ cents for water white. This oil is believed to have been purchased by British buyers. Prices are almost entirely nominal. Stocks are accumulating and there is talk of the possibility of a cut in the tank wagon and export quotations soon. Cased kerosene was flat business shipments being chiefly against contracts placed some time ago. Far Eastern buyers are still inquiring in a fairly active way but confining their purchases to actual needs. There were two or three inquiries from continental Europe for cargoes of prime and water white kerosene but buyers ideas were much out of line with those entertained by sellers.

The weakness in coal is reflected to a certain extent in the bunker oil market. This item is not so firm as it was a week ago and while refiners are still holding out for $1.70 a barrel at the refineries, the belief that prices will go lower soon is becoming general. Stocks of bunker oil are of fairly generous proportions, but the movement is large, particularly against standing contracts and the refiners maintain that there will be no reductions soon unless crude oil breaks.

Gas Oil is Lower

The price for 36-40 gas oil was a trifle lower at the close of the week, and refiners were offering this oil around at 5 cents a gallon against 5¼ cents the previous week. Light fuel oils were in fair demand and 26-28 was held at 4 cents Gulf, with indications that this price might be shaded a little on firm business.

The list of lubricants was weak. There is a little better export demand for some of the heavy motor oils but in the main foreign buyers are showing little or no interest and sales were confined to a few hundred barrels, whereas a month or so ago the same factors bought from 1000 to 2000 barrels. Pennsylvania 600 steam refined is nominally quoted at 18 cents New York, cooperage basis, while western stock is held at 15½ cents and could probably be had at 15 cents in some directions.

New York Markets

The following prices are quoted by eastern seaboard independent refineries on products which are manufactured from Mexican crude transported from Tampico to the refinery by tanker and from California crude.

	June 18
*Gasoline (New Navy) gal., Tank Cars	.14¼
†Bunker oil (F.O.B.New York) bbl.	1.70
Gas Oil (36-40 refinery) gal.	.05
‡Kerosene, 45-150 W. W. Bulk Del.,N.Y. nom	.07

*Delivered.
‡Nominal.
†Plus .06½ charge lighterage

Export Markets

Furnished to N. Y. Produce Exchange by big exporting oil companies. No actual sales. Record for statistical purposes only.

Illuminating Oils

	June 18	June 11
Bulk, gal., Bayonne	6.00	6.00
Barrels, gal., Bayonne, cargo	15.00	15.00
Cases, gal., Bayonne	15.90	15.90

Prices for water white oil (150 test) are 1 cent higher than those for standard white.

Gasoline-Naptha

(Cents per Gallon)

U. S. Navy, bulk	15.00	15.00
U. S. Navy, cases	28.65	28.65
Export grade, bulk	17.50	17.50
63-66 deg. bulk	19.50	19.50
66-68 deg. bulk	20.50	20.50

Tide Water Oil Company

(f. o. b. Bayonne)

59-60 deg. bulk	16.00	16.00
59-61 deg. cases	28.65	28.65
Export grade, Navy Specifications bulk	15.00	15.00
63-65 deg. bulk	19.50	19.50
68-72 deg. bulk	21.50	21.50

	Bulk	Barrels	Cases
Standard white 110	6.00	13.00	15.90
Water white 150	7.00	14.00	16.90

The Texas Company

Gasoline, cases		28.65	28.65
Kerosene	Bulk	Barrels	Cases
Standard White	6.00	13.00	15.90
Prime White	6.50	13.50	16.40
Water White	7.00	14.00	16.90

Paraffin and spindle oils were very quiet and no trades of consequence materialized. Not one bulk sale of lubricating oil was reported.

The waxes held fairly steady. Large buyers of white crude scale wax were keenly interested in the trend of the market but business was chiefly confined to sales of from 50 to 100 tons. Fully refined waxes were quiet.

Medicinal oil prices were unchanged. The demand was of a light routine character. However, there was a little more doing in the list of petrolatums although prices were somewhat softer. Snow white was offered fairly freely at 11½ cents and lily white at 9½ cents.

British Importations

During the week ended May 28 there were imported into the United Kingdom 21,773,751 gallons of petroleum and products. The larger imports at London included 1,500,000 gallons of fuel oil to the British Mexican Petroleum Co., Ltd., from Tampico; 294,740 gallons of benzine and 1,502,640 gallons of gasoline to the Shell Marketing Co., Ltd., from Rangoon. The British Petroleum Co., Ltd, received 1,072,370 gallons of fuel oil from New Orleans. The Anglo-American Oil Co., Ltd., received 1,066,290 gallons of kerosene from Baton Rougue.

At Liverpool the Vacuum Oil Co., Ltd., received 1,290,000 gallons of lubricating oil in bulk from Philadelphia while the British Petroleum Co., Ltd., received 1,937,500 gallons of fuel oil from New York. At Bristol the Anglo-American Oil Co., Ltd., received 614,700 gallons of gas oil from Texas City and 373,430 gallons of fuel oil from Baton Rouge. At Hull the Anglo-Mexican Petroleum Co. received 426,000 gallons of kerosene from Tampico. At Manchester the Anglo-American Oil Co. received three large shipments, consisting of 699,000 gallons of fuel oil from Baytown; 216,360 gallons of fuel oil from New York, and 1,760,800 gallons of lubricating oil in bulk from New York.

At Southhampton the British Mexican Petroleum Company received 1,957,000 gallons of fuel oil in bulk from Tampico while the National Benzole Co. received 2,229,371 gallons of gasoline from San Pedro. At Swansea the National Oil Refineries Ltd., received 5,040,560 gallons of crude oil from Abandan.

Bankruptcy Sale Approved

SHREVEPORT, June 16.—In an order signed by Federal Judge G. W. Jack here the act of sale of the Louisiana Petroleum Products Co., bankrupt, holdings in Bossier parish, including 29 acres of land, a refinery in Bossier City, and other appurtenances to the Invincible Oil Co. interests has been ratified. The consideration was $64,000 cash.

TULSA, June 16.—R. B. Tansel, sales manager of the Randolph Petroleum Co., has exhausted his second box of cigars in announcing the birth of his first child, Betty Lou Tansel, who was born on June 5.

TULSA, June 16.—J. F. Reardon, superintendent for the Imperial Refining Co., is in Chicago this week visiting refineries in that vicinity.

Linseed Oil Is Softer; Benzol More Plentiful

NEW YORK, June 18.—Linseed oil was appreciably softer at the close of the week, due to the heavy offerings of foreign oil. Most of the local crushers were asking $1.14 a gallon for spot oil in carlots cooperage basis, but on a firm bid $1.12 could have been done. English oil is offered quite freely at $1.03 while domestic oil for the first half of July is held at $1.08 and the second half $1.06, but a bid of $1.04 would probably have done business. Stocks of linseed oil appear to be growing rapidly. Sellers in these parts seem more inclined to press sales, and are more pessimistic regarding the future.

Fish oils are about steady. Crude menhaden oil is held at 50 cents a gallon with some buyers inclined to believe that on a firm bid business can be done at 48 cents in tanks at the factory. Sellers of light pressed menhaden oil are asking 82 cents a gallon, but buyers' ideas are a little below this level. Stocks of light pressed oil are of small proportions. Not much buying interest was manifested in cod or whale oils.

Animal oils are much easier and red oil is reported available at 8¾ cents while horse oil is held at 8½ cents. Stearic acid was quiet but fairly steady. The call for lard oil was much below expectations but neatsfoot oil was moving a little more freely. Soya bean oil was a flat affair. The market was easier but no noteworthy changes came to light. Perilla oil was also rather dull.

During the greater part of the week, the naval stores market was a flat affair. Spirits of turpentine was offered around at $1.05 a gallon on Saturday with buyers showing comparatively little interest. Stocks are of fairly generous proportions. Rosins are quiet. Rosins oil has been quiet and without interesting development, but there has been a much better inquiry for both tar and pitch.

Benzol was more plentiful last week but no price changes came to light. Stocks are of moderate proportion. The demand is fairly active and the market was steady. Sulfuric acid is less plentiful while demand is more active. The output appears to have fallen off a little of late. Bleaching powder is far from plentiful and while there is not much demand the market is firm. Soda ash was in light routine demand at unchanged prices. The export demand for caustic soda was not quite up to expectations and prices were somewhat easier although no fluctuations in prices were recorded. Silicate of soda was very dull. Business was sluggish and routine as this is the off-season. This commodity usually sells well early in the spring, and late in the summer.

TULSA, June 16.—Mid-Continent offices for the General American Tank Car Co. were opened here today at 502 Cosden building. Robert Rose, formerly southwestern representative of the Standard Tank Car Co., will travel out of the new office in this territory. R. J. Sharpe will spend a larger part of his time in Tulsa in the future.

TULSA, June 16.—Charles L. Simon, of Philadelphia, technical director of advertising for the Brown Instrument Co., spent several days in Tulsa this week in the interests of his company.

Refiners' and Jobbers' Supplies

Following are the average market prices for the week on the principal materials used by refiners and jobbers, f o b. shipping point as effective this date

***Benzol**

		June 18	June 11
Pure Water White, Tanks	gal.	-.27	$ -.27
Drums	gal.	-.32	-.32
90% Tanks	gal.	-.25	-.25
Drums	gal.	-.30	-.30

Refiners' Supplies

Soda Ash light 58%	cwt.	$1.75-2.10	$1.75-2.10
Silicate of Soda 60 deg.	Bbls. cwt.	2.00-2.25	2.00-2.25
Sal. Soda	cwt.	1.10-1.30	1.10-1.30
Caustic Soda 85%	cwt.	3.25-3.30	3.35-3.40
Chloride of Lime	cwt.	1.90-2.00	1.90-2.00
Sulphuric Acid 60 deg. tank cars f. o. b. shipping point	per ton	9.00-11.00	9.00-11.00

Jobbers' Supplies (Open Market)

Vegetable Oils—			
*Linseed, carloads Spot	gal.	$1.12-1.14	1.14
June	gal.	1.12	1.12
‡July-October	gal.	1.04	106-1.08
Less carload Spot	gal.	1.16	1.16
5 Bbls. or less Spot	gal.	1.20	1.20
Boiled, tank Spot	gal.	1.13	1.13
Boiled, carloads Spot	gal.	1.17	1.17
Soya Beans Spot, Tanks	lb.	.11	.10½
Animal Oils—			
English Degras	lb.	$-.04½	$-.04
Domestic Degras, bbls. carloads	lb.	-.04¼	-.04¼
Horse	lb.	-.08¼	-.08¼
Oleic Acid—			
Dist	lb.	-.08¾	-.10½
Saponified	lb.	-.08¾	-.10½
Lard Oils—			
Prime Winter Strained	1 to 1½ ffa.	.40/45c.t.lb.	$.14½ $.14½
Extra Winter Strained	2 to 4½ ffa.	.40/45c.t.lb.	.12¾ .12¾
Extra	4 to 5 ffa.	.40/45c.t.lb.	.12½ .12½
Extra No. 1	7 to 10 ffa.	.40/50c.t.lb.	.12 .12
No. 1	15 to 18 ffa.	.40/45c.t.lb.	.11½ .11½
No. 2	22 to 23 ffa.	.40/45c.t.lb.	.11 .11
Prime Edible Tallow under 1¾ ffa. 40/45c.t.N Y	lb.	.08½	.08½
Tallow acidless	lb.	-.11½	.12
Lard Stearine	lb.	-.13	.15½
Oleo Stearine	lb.	-.09	.09
Neatsfoot Oil—			
Pure	bbls.- lb.	14¼	14¼
Extra	do lb.	12	12
No. 1	do lb.	11½	11½
Cold pressed	lb.	16¾	16¾
Fish Oils—			
Menhaden Oil Light pressed	gal.	$.82	.80
White	gal.	.84	.84
Yellow bleached	gal.	.83	.83
*Herring, tank cars coast	gal.	.45	Nominal
Whale, extra winter bleached	gal.	.81	.81
Seal			Nominal
Naval Stores—			
Turpentine, N. Y	gal.	1.03	1.03
Turpentine†	gal.	.97	.95½
Rosin B. N. Y	Bbl	5.80	5.80
Rosin F. N. Y	Bbl.	5.95	5.95
Rosin B.†	Bbl.	4.75	4.60
Rosin F.†	Bbl.	4.75	4.65
Rosin Oil 1st. run	gal.	.40	.40
Rosin Oil 2nd. run	gal.	.48	.48
Pine Tar—			
Kiln Burnt	Bbl.	13.50	13.50
Retort	Bbl.	12.50	12.50

†Savannah, Ga., market.

‡Carlots

*Nominal

Weather Man Curtails Kansas Refinery Runs

(Complete Refinery Prices, pp. 131-133)

WICHITA, KAN., June 16.—It is estimated that 90 per cent of Kansas plants have been affected by the recent high waters. Some of the plants have been completely shut down and report they may be idle for a week or 10 days, and even some of the refiners hardest hit admit it may be a blessing in disguise.

It looks as if the weather man, who for many weeks past has seriously interfered with gasoline sales, has concluded he would slow down refinery runs himself.

The refiners in this territory operating bulk stations of their own, report a satisfactory gallonage over the last week, while those refiners selling to the jobbing trade exclusively report a slack demand with a wide range in prices though some are holding the price of 58-60 Navy and 56-58-450 e.p. to 13½ cents and 13 cents, respectively.

This condition would indicate that many jobbers are not so eager to pay the refiner a higher price when they can buy at lower prices from carload marketers who got thier supplies considerably lower prices than refiners are quoting today.

S. Texas Slightly Stronger

(Complete Refinery Prices, pp. 131-133)

HOUSTON, June 16.—A strengthening movement but without corresponding price reaction, is apparent in south Texas which has been generally dull over recent months. The strength shown, however, is nominal rather than showing any material upturn. Stocks over all the country are described as large enough that the general market is not expected to undergo any great re-adjustment upward, sales managers say, until this accumulation is worked out.

Magnolia Petroleum Co's. establishment at Dallas of a sales department for movement of materials to the jobbing trade, is the first intimation that larger companies are seeking fresh outsets for manufactured goods. This department has been placed in charge of George Miller as manager.

La.-Ark. Market Firm

(Complete Refinery Prices, pp. 131-133)

SHREVEPORT, June 16.—Refiners in the Arkansas and north Louisiana market are in better shape regarding motor fuels than some other areas within the Mid-Continent. Sales have been made over the last three weeks at prices around 12 cents while some other refineries have held to 13½. Prices here today are somewhat better than those prevalent in Group 3 Navy gasoline is moving at 11½ to 12 cents.

Fuel oil is somewhat weaker, being offered at 85 cents in El Dorado and 95 cents to $1 in Shreveport where there is a better local market.

TULSA, June 16.—Charles H. Waggoner, manager of the Service Petroleum Co., of Tucson, Ariz., has been in Tulsa this week visiting with refiners. The Service Petroleum Co. is a jobbing company handling gasoline from both California and north Texas fields. It draws its lubricating oils from Oklahoma refineries, however.

Carriers Responsible In Two Tank Car Cases

Staff Special

TULSA, June 16.—Two court decisions of unusual interest to operators of tank cars are announced in the current bulletin of the Western Petroleum Refiners Association. Both held the railroads liable for shipments of acid and interest on the claim to date of settlement.

In one case a tank car of acid was lost through a leak an hour after the car had been inspected with no evidence of rough handling having been produced. Justice William C. Wilson, of the Municipal court, Part 1 of the ninth district, Borough of Manhattan, New York, held that the leak must have been caused by negligence of the carrier and awarded a verdict of $528.16 plus $84.50 interest.

In a second case a car was derailed because of a broken truck side. Evidence showed that the break was the result of a latent defect since three-fourths of the break was rusty. The court held that the railroad was negligent because it had not inspected the car carefully enough to detect the break and refuse to transport the car. A judgment for the value of its contents was given.

Refiners Open Campaign For Lower Ocean Rates

Staff Special

TULSA, June 16.—Early action seeking an adjustment of ocean freight rates from Gulf ports on a more equitable differential over Atlantic port rates was decided upon by the traffic committee of the Western Petroleum Refiners Association at a recent meeting.

J. F. Lawrence, commerce counsel of the association, was authorized to make a complete study of existing rates and open negotiations with steamship lines seeking necessary adjustments. The subject of ocean freight rates which are hampering Mid-Continent plants in reaching foreign business was brought up at the annual convention of the association in April.

The committee authorized intervention of the association in the complaint of the Traffic Bureau of Omaha which attacks oil rates from Wyoming and Mid-Continent fields to North Platte, Neb. Members of the committee felt that the case might become highly important because of its general nature and the competitive shipping points involved.

TULSA, June 16.—D. E. Buchanan, vice president of the Chestnut & Smith Corp., is the father of a baby girl, Barbara Darst Buchanan, who was born last Sunday. The young lady weighed 8½ pounds when born.

BARTLESVILLE, June 14.—T. E. Swigart, superintendent of the Bureau of Mines station here, has returned from a trip of inspection over the Hewitt field.

Crude Oil Prices All Fields

EASTERN FIELDS

	1923 June 18	1922 High		1922 Low		1921 High		1921 Low	
Bradford—Allegany	$3.25	Jan. 1	$4.00	July 19	$3.00	Jan. 1	$6.10	June 29	$2.25
Other Pennsylvania	3.00	Jan. 1	4.00	July 19	3.00	Jan. 1	6.10	June 29	2.25
Cabell	1.71	Jan. 1	2.61	July 19	1.86	Jan. 1	4.46	June 29	1.11
Corning	1.70	Jan. 1	2.40	July 20	1.75	Jan. 1	4.00	June 29	1.20
Somerset	1.55	Jan. 1	2.40	July 19	1.65	Jan. 1	4.50	June 29	1.00
Somerset Light	1.75	Jan. 1	2.65	July 19	1.90	Jan. 1	4.25	June 29	.90
Ragland	.90	Jan. 1	1.25	July 19	1.00	Jan. 1	2.60	June 29	.60

Somerset oil run on and after Oct. 1, 1922, takes price of 6 cents higher than above quotation

CENTRAL STATES FIELDS

Wooster	$2.05	Jan. 1	$2.70	Sept. 21	$1.90	Jan. 1	$4.95	June 27	$1.80
Lima	2.18	Jan. 1	2.48	July 20	1.98	Jan. 1	5.73	June 27	1.58
Indiana	1.98	Jan. 1	2.28	July 20	1.78	Jan. 1	5.63	June 27	1.58
Princeton	1.97	Jan. 1	2.27	July 20	1.77	Jan. 1	5.77	June 27	1.27
Lodi	2.05	Jan. 1	2.70	July 20	1.90	Jan. 1	4.00	June 27	1.80
Illinois	1.97	Jan. 1	2.27	July 20	1.77	Jan. 1	5.77	June 27	1.27
Waterloo, Ill	1.45	Jan. 1	1.75	July 20	1.25	Jan. 1	1.75	June 27	.75
Plymouth	1.55	Jan. 1	1.65	July 20	1.15	Jan. 1	3.48	June 27	.65
Canadian Petrolia	2.58	Jan. 1	2.88	July 20	2.58	Jan. 1	4.13	June 27	1.98
Western Ky	1.75	Jan. 1	2.40	July 19	1.65	Dec. 1	2.40	June 27	.58

MID-CONTINENT AND NORTH TEXAS FIELDS

Effective May 1? the Prairie Oil & Gas Co., reduced the posted price of Mid-Continent and north Texas crudes it purchases by 10 cents a barrel. Mid-Continent Crude was put on a gravity basis by this company Nov. 22

Below 28	1.10	35–36.9	1.60
28–29.9	1.20	37–38.9	1.80
30–32.9	1.30	39–40.9	2.00
33–34.9	1.45	41 and above	2.20
Mexia	1.60	Currie, below 41	1.50
		41 and above	1.90

Magnolia's Price Schedule

Under 28	.70	Corsicana, light	1.25
28–30.9	1.05	Corsicana, heavy	.70
31–32.9	1.30	Thrall	1.50

NORTH LOUISIANA FIELDS

Caddo, Homer, Haynesville, El Dorado

Below 30	$ .95	35 to and including 36.9	$1.60
30 to and including 32.9	1.30	37 to and including 38.9	1.80
33 to and including 34.9	1.45	39 degrees and above	2.00

Other prices in the district are:

Bull Bayou		Bellevue	$ .85
32 to and including 34.9	$1.45	Smackover, 26 and above	.85
35 to and including 37.9	1.50	25 to 25.9	.70
38 degrees and above	1.60	24 to 24.9	.60
De Soto	1.80	Below 24 Be	.40
Crichton	1.45		

GULF COASTAL FIELDS

	1923 June 18	1922 High		1922 Low		1921 High		1921 Low	
Spindletop	$1.75	Jan. 1	$1.25	Dec.30	$1.25	Jan. 1	$2.50	June 13	$ .80
Goose Creek	1.75	Jan. 1	1.25	Dec.30	1.25	Jan. 1	2.50	June 13	.80
Sour Lake	1.75	Jan. 1	1.25	Dec.30	1.25	Jan. 1	2.50	June 13	.80
Humble	1.75	Jan. 1	1.25	Dec.30	1.25	Jan.1	2.50	June 13	.80
Batson	1.75	Jan. 1	1.25	Dec.30	1.25	Jan. 1	2.50	June 13	.80
Hull "A"	1.75	Jan. 1	1.25	Dec.30	1.25	Jan. 1	2.50	June 13	.80
Hull "B"	1.30	Jan. 1	1.25	Dec.30	1.25	Jan. 1	2.50	June 13	.80
West Columbia	1.75	Jan. 1	1.25	Dec.30	1.25	Jan. 1	2.50	June 13	.80
Edgerly	1.75	Jan. 1	1.25	Dec.30	1.25	Jan. 1	2.50	June 13	.80
Vinton	1.75	Jan. 1	1.25	Dec.30	1.25	Jan. 1	2.50	June 13	.80
Jennings	1.75	Jan. 1	1.25	Dec.30	1.25	Jan. 1	2.50	June 13	.80
Dayton	1.75	Jan. 1	1.25	Dec.30	1.25	Jan. 1	2.50	June 13	.80
Saratoga	1.75	Jan. 1	1.25	Dec.30	1.25	Jan. 1	2.50	June 13	.80

WYOMING FIELDS

Elk Basin	$1.70	Jan. 1	$1.90	Aug. 4	$1.20	Jan. 1	$3.10	June 27	$1.00
Grass Creek	1.70	Jan. 1	1.90	Aug. 4	1.20	Jan. 1	3.10	June 27	1.00
Big Muddy	1.25	Jan. 1	1.40	Aug. 4	.70	Jan. 1	2.75	June 27	.50
Salt Creek	1.25	Jan. 1	1.40	Aug 4	.70	Jan. 1	2.75	June 27	.50
Lance Creek	1.70	Jan. 1	1.90	Aug. 4	1.20	Jan. 1	3.05	June 27	.95
Rock Creek	1.85	Jan. 1	1.50	Aug. 4	.80	Jan. 1	2.85	June 27	.60
Osage	1.70	Jan. 1	1.90	Aug. 4	1.20	Jan. 1	3.05	June 27	.95
Cat Creek, Mont	1.70	Jan. 1	1.90	Aug. 4	1.20	Jan. 1	3.10	June 27	1.00
Sunburst, Mont	.70								

CALIFORNIA

14–19.9	$ .60	25–25.9	.74	30–30.9	$ .89
20–20.9	.61	26–26.9	.77	31–31.9	.92
21–21.9	.62	27–27.9	.80	32–32.9	.95
22–22.9	.65	28–28.9	.83	33–33.9	.98
23–23.9	.68	29–29.9	.86	34–34.9	1.01
24–24.9	.71			35 and above	1.04

OIL STOCKS and FINANCES

Low Priced California Crude Cuts Associated Oil Co.'s Net Profit

SAN FRANCISCO, June 14. THE Associated Oil Co. in 1922 earned a net profit of $4,190,568 equal to $10.54 a share as against earnings of $20.52 a share in 1921. The net was after interest, federal taxes, depreciation, depletion and other charges. Dividends were paid at the rate of 6 per cent.

The statement of Paul Shoup, president, to stockholders says in part:

"The earnings of the company were adversely affected by successive declines in prices of oil, the base price in the field falling during the year for oil of less than 18 degrees gravity from $1.10 to 60 cents a barrel. There were corresponding decreases in the selling price of fuel oil and in some instances earnings of the company from produced oil and fuel oil sold were materially less than during the preceding year. The production of the Associated Oil Co. has been almost all together in the San Joaquin valley with a limited production in the coast district, and a conservative course with respect to development in these sections was necessary in view of the very large flush production in southern California, which has for the time being greatly depressed market prices.

"Operations in southern California have been through subsidiaries of the Associated Oil Co., but the magnitude of development in that region has made it necessary, because of the limited capital of these companies, for the Associated Oil Co. to take hold in that section, which it has done through the construction of pipe lines, necessary storage tanks, a marine shipping plant at San Pedro and other required facilities.

"Our refined oil sales show an increase in volume of 22 per cent over the preceding year. Reasonable profit was earned."

The company's balance sheet as of Dec. 31 shows current assets $8,000,000 greater than current liabilities with $1,157,000 cash on hand at the end of the year. The funded debt decreased $2,313,000, leaving $5,997,000 outstanding at the end of the year.

The company acquired 14,275 acres of land, including 1254 in the San Joaquin fields, 856 in southern California, 4184 in Ventura, one half interest in 1581 in Texas, 1280 in Wyoming and 5120 in Alaska. The company also bought 745 acres near Los Angeles for a refinery.

The company's drilling program was curtailed during the year because of the large production in southern California. Seventeen wells were completed. They were distributed in the various fields as follows: Kern 6, Midway 8, Coalinga 1, Ventura 1, Huntington Beach 1. The company had seven wells drilling at the end of the year.

During 1922 $3,459,170 was spent on refinery expansion. The distribution branch was expanded by the addition of 36 service and bulk stations. At the end of the year it had 122 service stations and 51 bulk stations in operation. The company also has 407 trucks and 266 passenger cars.

The company has storage facilitiies for 7,077,000 barrels of oil. There are 93 steel tanks and one concrete reservoir. Its production during the year amounted to 6,696,266 barrels, an increase of 718,506 over 1921. The combined production of Associated and affiliated companies was 11,676,019 barrels, an increase of 2,976,115 over the preceding year.

The marine equipment was increased by the addition of two vessels, the Paul Shoup of 6807 gross tonnage capable of carrying 75,000 barrels of oil and the Kewanee of 3550 gross tons capable of carrying 32,000 barrels.

Income reports of some of the owned and affiliated companies show:

Amalgamated Oil Co. profit of $176,416 as against a deficit of $192,794 in 1921.

Miley-Keck Oil Co., deficit of $38,236.

Pantheon Oil Co., earnings of $116,067, a decrease of $22,958.

Reward Oil Co., earnings of $132,462, a decrease of $69,682.

Sterling Oil & Development Co., earnings of $123,322, a decrease of $9,656.

West Coast Oil Co., deficit of $38,048.

Indicated net profit of the Associated Supply Co. was $399,707.

The consolidated income account of Associated Oil and proprietary companies for the last five years compare:

	1922	1921	1920	1919	1918
Operating income	$36,776,769	$49,610,133	$51,193,959	$38,069,130	$30,977,590
Other income	1,086,520	3,877,426	767,290	452,037	265,890
Gross revenue	$37,863,289	$53,487,559	$51,961,249	$38,521,167	$31,243,481
Operating expenses, federal taxes, depreciation, depletion, etc.	33,672,722	45,329,607	43,153,531	32,450,824	26,702,174
Net profits	$ 4,190,568	$ 8,157,952	$ 8,807,718	$ 6,070,343	$ 4,541,307
Dividends	2,385,345	2,385,343	2,385,348	1,987,811	1,987,832
Surplus	$ 1,805,223	$ 5,772,609	$ 6,422,370	$ 4,082,532	$ 2,553,47

The consolidated balance sheets of Associated and proprietary companies for the last five years compare:

ASSETS	1922	1921	1920	1919	1918
Real estate	*$33,232,584	$31,574,538	$31,761,292	$32,536,854	$31,618,183
Improvements	* 41,982,841	38,649,371	36,420,498	29,752,783	27,733,946
Securities	9,760,858	9,472,627	10,249,477	9,823,145	10,076,443
Due from affiliated companies	4,455,686	4,605,816	698,167	1,136,150	1,375,159
Sinking funds	924,774	924,760	915,929	908,198	902,831
Cash	1,157,491	962,876	748,547	1,784,985	1,261,270
Loans, bills receivable	3,613,713	3,282,095	4,058,191	3,386,505	2,829,20
Materials, supplies	2,863,278	2,838,985	2,979,183	1,746,513	1,505,34
Merchandise	7,329,995	5,069,154	6,188,013	6,042,918	5,193,737
Interest, dividends, rents receivable	3,463	7,155	6,964	2,365	.....
Deferred assets	418,371	299,954	549,100	63,460	74,971
Unadjusted debits	1,146,671	2,445,886	2,015,247	928,849	1,008,982
Total	$82,310,765	$100,133,217	$96,590,674	$88,112,725	$83,580,07
LIABILITIES					
Capital stock	$39,755,724	$39,755,756	$39,755,634	$39,756,085	$39,960
Bonds	5,997,000	8,310,000	9,278,000	10,240,000	10,455,000
Loans, bills payable	4,105,000	.....	1,175,000	969,159	425,000
Accounts payable	2,068,102	3,284,450	1,820,233	1,221,570	1,367,358
Wages payable, etc	4,121,860	1,338,537	2,813,286	1,798,101	1,000,365
Due affiliated cos	3,236,000	1,793,750	130,550	.....	136,131
Accrued interest, dividends, etc.	743,978	793,482	820,464	232,816	241,337
Deferred liabilities	626,110	99,801	1,431,758	250,526	6,373
Unadjusted credits	1,034,936	2,694,292	3,874,216	1,691,700	2,945,055
Depreciation reserve	.....	21,997,851	19,973,296	19,188,168	17,438,131
Surplus	20,622,055	20,065,298	15,518,237	12,764,600	9,604,617
Total	$82,310,765	$100,133,217	$96,590,674	$88,112,725	$83,580,073

*Less $24,578,960 depreciation and depletion.

Financial Notes

Sinclair Consolidated Oil Corp.—Officers are re-elected.

Standard Oil Co. of Louisiana—Charter amended increasing authorized capital stock from $30,000,000, to $75,000,000.

Pan-American Petroleum & Transport Co.—Directors re-elected at annual meeting.

Transcontinental Oil Co.—Mortgage to the Equitable Trust Co. and Samuel Armstrong of New York for $10,000,000 payable in 10 years filed at Muskogee. This supplements a mortgage executed Dec. 1, 1921.

Texas Pacific Coal & Oil Co.—Reports say company plans to offer 150,000 more shares to stockholders at $10 a share. This would bring the number of outstanding shares to 1,000,000. It is said the additional money would be used to buy a half interest in an Independent refinery in Texas and pay for additional equipment including pressure stills at that plant.

S. O. California Refunds Its 7% Debenture Issue

NEW YORK, June 16.—The Standard Oil Co. of California is offering through a syndicate of bankers headed by Dillon, Read & Co., $25,000,000 5 per cent gold notes which will mature $2,500,000 a year over the next 10 years. The proceeds will be used to retire on Aug. 1 the company's outstanding $25,000,000 10-year 7 per cent gold debentures due Jan. 1, 1931.

The prices of the notes range from par for the notes maturing Aug. 1, 1924 ,to 98¾ for those maturing Aug. 1, 1933. The notes will constitute the only funded debt of the company. Delivery will be made about July 2 and interim receipts will be discounted at the rate of 5 per cent per annum to Aug. 1. The debentures will be accepted at 104 and accrued interest in payment upon the confirmed sales of the notes.

The company has outstanding $231,-254,422 par value capital stock which has a market value in excess of $450,000,000.

Tells Why Tide Water Withholds Dividends

NEW YORK, June 14.—R. D. Benson, chairman of the board, Tide Water Oil Co., has issued to stockholders a statement telling why the company has refrained from resuming dividend payments. Uncertainty of the immediate future because of overproduction of crude is give as the cause. The state ment says:

"The company stopped paying dividends Dec. 31, 1921, after having paid them through that year at the rate of 8 per cent in spite of an operating loss of $2,020,388 after deducting charges for depreciation and depletion. In 1922, after similar deductions, the company earned $4,975,968. From Jan. 1, 1923, to June 1, 1923 (May partly estimated) the company has earned, after deducting charges for depreciation and depletion, $2,521,382, compared with $1, 293,990 for the same months of 1922.

"On Sept. 30, 1921, the company's surplus account had fallen to $11,079,-629.06. From then it has steadily increased until on April 30, 1923, it stood at $19,244,493.04.

"We are now running at the Bayonne refinery and expect to continue to run 34,000 barrels a day as against an average of 23,000 barrels a day last year and the company's sales have correspondingly increased.

"The largely increased volume of business made possible by the running of California crude at the Bayonne refinery, while to a great extent accounting for the improved earnings, has required additional working capital which has been almost entirely secured from earnings. The wisdom of this policy will unquestionably be proved by th larger returns from sales during the summer months.

"In addition, there have been during 1923 liberal expenditures made for betterments at the company's other refineries and in its producing properties without new financing of any kind.

"If it were not for the present uncertainty due to over-production of crude oil in the California and Mid-Continent fields, the board would feel that the company's position and earnings justify the declaration of a dividend at this time. Until the situation has become more settled, it is the opinion of the board that the best interests of the company and its stockholders will be served by a further postponement of dividend payments."

Sinclair Consolidated Issues 25 Million Bonds

CLEVELAND, June 15.—Blair & Co., New York, heads a syndicate of bankers which has underwritten an issue of $25,-000,000 first lien collateral 15-year 6½ per cent gold bonds, series B, of the Sinclair Consolidated Oil Corp. The bonds are offered at 94 to yield 7.15 per cent. The company last year issued $50,000,000 series A, which bear 7 per cent interest and retired an issue of $46,429,600, 7½ per cent 5-year notes. The total authorized bond issue is $100,-000,000, leaving $25,000,000 yet to be put out.

According to the letter of E. W. Sinclair, president of the corporation, the proceeds of the present issue will be used to reimburse the corporation for capital expenditures incurred in the construction of a refinery at Marcus Hook, Pa., and enlarging the plants at Houston and East Chicago. With these additions the corporation will have a refining capacity of 75,000 barrels daily.

The issue is secured by $90,000,000, 7 per cent bonds of subsidiary companies. These bonds are $45,000,000 of the Sinclair Oil & Gas Co.; $35,000,000 of the Sinclair Refining Co. and $10,-000,000 miscellaneous including the Union Petroleum Co. and the Sinclair Navigation Co.

As of Dec. 31, 1922, the company, in addition to the 7 per cent bonds, had outstanding $4,855,073 equipment trust notes and purchase money obligations.

Series B bonds will be subject to redemption in whole at any time or in part from time to time at 107½ up to and including March 14, 1927; thereafter at 105 up to and including March 14, 1932; thereafter at 102½ less ½ per cent for each 12 months until March 14, 1937 and thereafter at par until maturity.

The bonds are in denominations of $100, $500 and $1,000.

Burmah Oil Co. Report

NEW YORK, June 16.—Reports received here from London place the profit of the Burmah Oil Co. for 1922 at £2,115,823 after providing for expenditure on drilling and deepening wells, which was charged directly to profit and loss instead of depreciation as heretofore. After allowing for income tax and charging £149,806 to depreciation on refineries, tankers and equipment, a final dividend of 20 per cent is recommended, making the total 1922 dividend 30 per cent, the same as in 1921.

Pacific Oil Earnings Lower In First Quarter

NEW YORK, June 14.—The Pacific Oil Co. for the first quarter of 1923 reports a surplus of $178,900 or 62 cents a share on the 3,500,000 shares of capital stock, after all charges and reserves, compared with $2,825,794 or 80 cents a share in the first quarter of 1922. The decrease is due mainly to the lower price of California crude oil. The income accounts of the two quarters compare:

	1923	1922
Gross earnings	$4,606,540	$5,195,955
Operating expenses	1,832,233	1,807,386
Ordinary taxes	324,213	202,276
Net earnings	**$2,450,094**	**$3,186,293**
Other income	532,346	476,150
Gross income	**$2,982,440**	**$3,662,443**
Res., depr. & depl.	760,730	786,649
Federal taxes	42,810	50,000
Surplus	**$2,178,900**	**$2,825,794**

* * *

NEW YORK, June 16.—Net earnings of the Cities Service Co. for April after interest was $1,459,016 compared with $1,-161,247 for April, 1922. Net to common stock after dividends on perferred amounted to $1,043,426 as compared with $752,462 in April, 1922.

Has 10,000 Stockholders

SAN FRANCISCO, June 16.—The Standard Oil Co. of California at the end of last year had 10,904 shareholders an increase of 2,574 during the year. Forty-four per cent of the stockholders are women and 99 per cent live in the United States.

The company at the end of the year had 19,140 employes and the payroll for 1922 was $37,786,745, an average of $174 a month. Payment covering pensions, life insurance, sickness and disability benefits amounted to $1,101,629, the company's annual report says.

During the 19 months the employes stock investment and savings plan has been in force, employes have paid in $5,945,735 and the company has deposited $2,972,867.50. Shares issued to trustees under the plan total 191,802 and more than half the employes were participating.

Cleveland Stock Market

	Par Value	June 15 Bid	Asked	1922 High	Low
National Refg.	25	41	42	55	31¾
do pfd.	100	...	130	125	118
Paragon Refg.	25	9	9¾	16¼	10¼
do pfd.	100	....	73	80	75
Fred G. Clark Co.	10	3	4	11	6

Oil Dividends

	Amount	Payable	Stock of Record
Cosden q.	$1	Aug. 1	July 3
General Pet. q.	50c	June 15	June 1
Magnolia q.	$1.25	July 5	June 23
International Pet. q.	25c	June 30	June 23
Oklahoma Hat Gas. q.	1%	July 30	June 28
Ohio Fuel Oil	50c	June 30	June 23
Panhandle P. & R. pfd. q.	$2	July 2	June 22
Mountain Prod. q.	20c	July 2	June 15
do extra	10c	July 2	June 15
Prairie O. & G. q.	$2	July 31	June 30
Prairie Pipe q.	$2	July 31	June 30
Shell T. & T.	5s	July 5	.....

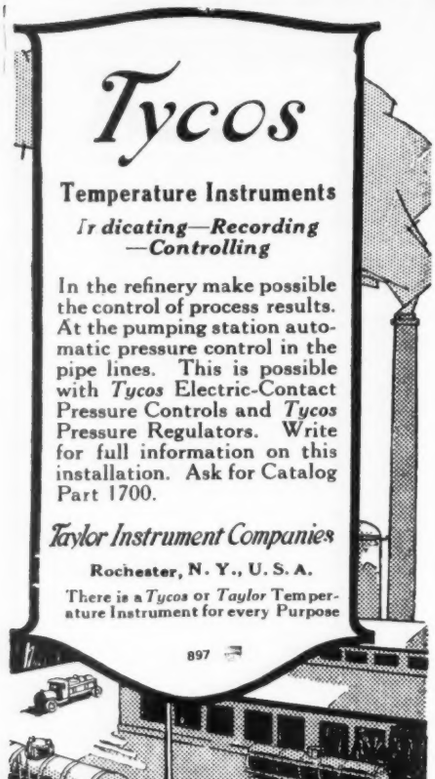
Transactions In Oil Shares On New York Stock Exchange

1922 High	1922 Low	1923 High	1923 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended June 15 Sales	First	High	Low	Last	Ch'ge
135½	91	134	104	$40,000,000	$100	Associated Oil	1½Q	Apr. 25, 23	400	114⅛	114⅛	x111½	111½	— 3½
1575	117	160	114	50,000,000	100	Atlantic Refining	$1Q	June 15,23	900	119½	119½	115	116	0
119½	114	120	115	20,000,000	100	do pfd	1¾Q	May 1,23						
56¼	19¾	35	18⅛	13,000,000	25	Barnsdall Corp. A	.62½	Apr.30,21	500	19⅛	19⅛	19	19	— 1¼
39	17	22	12	3,713,275	25	do B	.62½	Apr.30,21	600	12	12¼	†12	12	— 3⅛
15¼	6¾	9⅛	2⅞	150,000	N.P.	Caddo Central O. & R			4,100	3½	3½	†2⅞	3	— ½
71⅞	43⅛	117¾	66¼	17,377,000	100	California Petroleum	1¾Q	June 1,23	90,700	107½	111½	105¼	108¾	+ 1½
		29¾	21½	17,500,000	25	Calif. Pet. new	.87½Q	June 1,23	159,300	26¾	27½	22⅝	23	— 4½
98½	83	110½	94¾	12,989,500	100	do pfd	1¾Q	Apr. 1,23	4,100	106	107½	101½	102	— 4
54	31⅝	62¼	42⅞	1,164,515	N.P.	Cosden & Co	$1Q	May 1,23	69,800	47⅝	48	†42⅞	43⅝	— 4⅜
102½	93½	109⅜	100	6,998,000	100	do pfd	1¾Q	June 1,23						
73¾	37¼	54	28⅝	19,828,500	100	General Asphalt Co			19,000	33¼	33¼	†28⅝	30½	— 2½
111	68½	83	66	7,416,100	100	do pfd	1¼Q	June 1,23	1,200	68⅜	68⅜	†66	66	— 1½
78	45	50¼	48	3,236,600	100	Gilliland Oil pfd	2	May15,21						
91¾	61¼	78	50	25,000,000	100	Houston Oil Co			6,800	64	64	58¾	59	÷ 5
		11¼	7	450,000	N.P.	Independent Oil & Gas			3,100	8¼	8⅜	†7	7	— 1½
25	12	19	5	5,000,000	25	Indiahoma Refining	‡.15	July 1,21	2,100	7	7	†5	5	— 1
11⅝	5⅜	8½	5⅝	7,830,450	10	Indian Refining	.50	Dec.15,20	1,100	6½	6¾	†5⅝	5⅝	— ⅜
20¼	12½	19¼	12	674,980	N.P.	Invincible Oil			15,500	13⅝	13⅝	†12	12	— 1⅝
3	¼	¾	¼	25,709,510	10	Island Oil & Trans			3,800	⅜	⅜	¼	¼	— 1/16
7½	1½	3½	½	14,662,890	10	Kansas & Gulf			900	¾	1	⅝	⅝	+ ⅛
46⅜	22⅝	59⅝	27¼	940,854	N.P.	Marland Oil Co	$1Q	Apr. 2,23	52,800	42⅛	42⅝	41½	42	— ¼
322	106¾	293	265	46,942,800	100	Mexican Petroleum	4Q	Apr.20,23						
108	79¼	105¼	100¼	12,000,000	100	do pfd	2Q	Apr.20,23						
34½	14½	23¾	14½	443,121	N.P.	Mexican Seaboard	.50Q	June 1,23	18,100	17⅛	18	15⅝	16⅝	— ⅜
32⅛	12	23¼	14	261,000	N.P.	do V. T. C	.50Q	June 1,23	8,500	16¼	17	14⅝	15⅜	— ½
16	11	12¼	8	29,765,640	10	Middle States Oil	.30Q	Apr. 1,23	44,700	9	9	†8	8¼	— ¾
62	47	67	31¼	38,626,000	25	Ohio Fuel Supply	31¼Q	Apr.15,23	300	32¼	32½	32	32	— ½
4⅜	1¾	3⅛	1¾	15,000,000	5	Oklahoma P. & R	2	Apr. 1,21	4,100	2	2	†1¾	1¾	— ¼
69⅜	42½	48¾	33⅜	3,500,000	N.P.	Pacific Oil Co	1½SA	Jan.20,23	25,600	36⅞	36⅞	x†33⅜	34½	— 2½
100⅞	48⅞	93½	67½	48,292,450	50	Pan-American P. & T	$2Q	Apr.20,23	73,100	74⅝	74¾	69¼	70⅞	— 3¾
95¾	44	86	63½	80,891,800	50	do B	$2Q	Apr.20,23	56,100	69⅛	69½	65⅛	66¾	— 2⅝
12	3	6¼	3	198,770	N.P.	Panhandle P. & R			1,900	3½	3½	†3	3	— 1
73	61	68	57½	2,935,200	100	do pfd	2Q	Apr. 2,23						
59¼	28¼	69⅝	44⅛	762,685	N.P.	Phillips Petroleum	.50Q	Mar.31,23	65,900	49½	50¾	x†44⅛	44¾	— 4¾
12	4	6	3	29,622,925	25	Pierce Oil Corp			3,900	3⅛	3¾	3	3½	+ ½
71	32	44½	30	15,000,000	100	do pfd	2	Feb. 1,22	1,600	31½	40	31½	37	+ 6
51	24⅛	58⅛	36½	36,914,200	50	Producers & Refiners	$1Q	June 15,23	51,000	41¾	41⅞	†36½	37⅛	— 4¾
49	36	49⅛	44	2,845,350	50	do pfd	87½Q	May 7,23	200	44	44	44	44	— 1
38⅝	26½	32	18⅛	69,413,800	25	Pure Oil Co	.50Q	June 1,23	30,700	19⅝	20⅛	†18⅛	18½	— 1⅛
102¾	94	100	93	13,000,000	100	do 8% pfd	2Q	Apr. 1,23	600	95⅛	95⅛	x95	95	— 2
67	47¼	55⅛	42½	(sh) 757,529	13.40	Royal Dutch, N. Y. shares	10 Int.	Jan. 1,23	6,700	47⅝	48¼	46½	47	— ¾
48½	34⅝	41¼	34⅜	(sh) 171,799	£1	Shell Transport	.92½	Jan.24,23	200	35½	35½	35⅜	35⅜	— 2½
13¼	12⅛	19¼	12¾	8,000,000	N.P.	Shell Union	.25Q	Mar.30,23	23,100	17⅜	x15¾	15⅞	16	— 1⅜
96⅛	90	93⅛	91	20,000,000	100	do pfd	1½Q	May15,23	300	91½	91½	91½	91½	0
		16	8¼	7,181,800	10	Simms Pet			15,300	9¾	10	†8¼	9⅜	— ⅝
38¾	18¾	39¾	24¾	4,477,477	N.P.	Sinclair Consolidated	.50Q	May15,23	126,800	28¾	28⅞	†24¾	25⅛	— 3⅞
102	97⅞	99⅛	93½	19,640,000	100	do pfd	2Q	May15,23	1,300	95½	95½	†93½	94	— 1¼
11⅞	8¾	35	18½	20,576,690	25	Skelly Oil			23,500	23½	23½	†18½	19¾	— 4
135	91¾	64⅛	49⅝	231,254,422	25	S. O. California	.50Q	June 15,23	20,600	53⅜	53¾	51⅛	51⅜	— 1¾
250½	169	44¼	32⅛	497,407,425	25	S. O. New Jersey	.25Q	June 15,23	35,300	33½	34⅝	†32⅛	32⅝	— 1¼
120	113⅜	118	115	199,972,900	100	do pfd	1¾Q	June 15,23	300	116¼	116¾	115¾	115¾	— 1
10¼	4	6¾	3½	451,708	N.P.	Superior Oil	.50	Dec.20,20	1,900	3¾	3⅞	†3½	3½	— ¼
52¼	42	52⅞	43⅝	164,450,000	25	The Texas Co	.75Q	Mar.31,23	27,300	44¾	45	†43⅝	44	— ¾
32¾	18⅛	24¾	10	8,380,340	10	Tex. Pac. Coal & Oil	.25Q	Mar.31,23	26,300	14⅜	14⅜	†10	11	— 3¼
154	109¾	144	103½	49,675,600	100	Tide Water Oil Co	2	Dec.30,21	1,300	110	110	†103½	106½	—13½
20½	7½	14½	6¼	2,000,000	N.P.	Transcontinental Oil			30,700	7¾	7⅞	†6¼	6½	— ¾
134¾	85⅞	99¾	81	18,000,000	100	Union Tank Car Co	1¼Q	June 1,23	200	86	86¼	86	86¼	— 3¾
113	102	120¼	107	12,000,000	100	do pfd	1¾Q	June 1,23	100	109¼	109¼	109¼	109¼	+ ⅜
54	25	30¾	24⅞	460,000	N.P.	White Eagle Oil & Ref	.50Q	Apr.20,23	2,300	26⅝	26⅝	25⅞	26	— 1
11⅜	2⅛	5⅞	2	959,046	N.P.	White Oil Corp			5,400	2¾	2¾	2	2	— ½

*New High †New Low ‡In Scrip xEx—Dividend Total Sales 1,171,900

Standard Oil Stock Traded In New York Curb Market

1922 High	1922 Low	1923 High	1923 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended June 15 Sales	First	High	Low	Last	Ch'ge
25	16⅝	18¾	14¾	£3,000,000	£ 1	Anglo-American Oil	46½SA	May15,23	3,600	15¼	15⅜	14⅞	14⅞	— ⅛
12½	4⅞	6½	2½	(sh) 500,000	N.P.	Atlantic Lobos			200	3⅝	3⅝	3⅝	3⅝	— ⅛
610	335	140	113	$1,000,000	100	Borne-Scrymser	4 S.A.	Apr.16,23						
110	83	94½	80	10,000,000	50	Buckeye Pipe Line	$1.75Q	June 15,23	70	84½	85	83¾	83¾	— ¼
225	175	237	207	1,500,000	100	Chesebrough Mfg	3½Q	Mar.31,23						
113	104			1,000,000	100	do pfd	1¾Q	Mar.31,23						
153	125	50	38¾	10,000,000	25	Continental Oil	.50Q	June 15,23	110	39½	39½	39	39	— 2
49	28	47½	17⅞	1,500,000	25	Crescent Pipe Line	1½Q	Mar.15,23	90	18½	18½	18	18	— ⅛
185	115	168	85	3,000,000	100	Cumberland Pipe Line	12A	Dec.15,22	10	100	100	100	100	— 2
103½	79½	117	95	5,000,000	100	Eureka Pipe Line	3Q	May 1,23	255	101½	102	100⅛	102	— 1
62	40	79¾	57½	16,000,000	100	Galena Signal Oil	1Q	Mar.31,23	411	63	63	60	60¾	— 3¾
105	100	105	105	4,000,000	100	do new pfd	2Q	Mar.31,23						
114	104			2,000,000	100	do old pfd	2Q	Mar.31,23						
267	212½	41¼	30⅛	43,750,000	25	Humble Oil & Ref	30Q	Apr. 1,23	1,045	30¾	31⅛	†30⅛	30⅛	— ⅜
198	154	171	158	20,000,000	25	Illinois Pipe Line	8S.A.	Dec.30,22	65	159½	159½	†158	158	— 1½
130¾	97½	123	99	39,222,750	25	Imperial Oil, coupons	3Q	June 1,23	1,840	105	106	102¼	102¼	— 1¾
111	84	103	95	5,000,000	50	Indiana Pipe Line	$2Q	May15,23	405	98	98	95¼	96	— ½
27½	14	24⅞	15	(sh)7,188,138	N.P.	International Petroleum	25c	Nov.20,22	17,900	17	18	16¾	16⅞	— ⅛
259	150	168	135	180,000,000	100	Magnolia Petroleum	1¼Q	Apr. 5,23	225	140	140	135	135	— 5
31⅛	23	29	24½	6,362,500	12½	National Transit	.50Q	June 15,23	900	25	25	†24½	24½	— ¼
214	117	137	108	5,000,000	100	New York Transit	3Q	Apr.15, 23	100	117	115	110	110	— 1
127	90	110	96	4,000,000	100	Northern Pipe Line	5S.A.	Jan. 1,23	30	98	99	98	98	— 2
365	71	85½	58½	60,000,000	25	Ohio Oil Co	3Q	Mar.31,23	2,800	66	66	†58½	60	— 4¼
44⅞	16	25	15¾	10,000,000	25	Penn-Mex Fuel			200	16	16	16	16	— ¼
750	520	700	180	54,000,000	100	Prairie Oil & Gas	2Q	Apr.30,23	410	197	197	†180	186	— 9½
325	224	335	101½	81,000,000	100	Prairie Pipe Line	2Q	Apr.30,23	1,090	105½	106½	104½	104½	— ½
405	340	212½	180	4,000,000	100	Solar Refining Co	5S.A.	June20,23	20	185	185	185	185	— 5
110	77	116	96	10,000,000	100	Southern Pipe Line	4Q	June 1,23	135	98	98	96	97	— 1
249	150	195	126	20,000,000	100	South Penn Oil	1½Q	Sept.30,22	130	144½	144½	134	137	— 7
70½	50½	88¼	66¾	3,500,000	100	Southwest Pa. Pipe Lines	2Q	Apr. 2,23						
135	58¾	69⅞	54¾	220,181,638	25	S. O. Indiana	.62½Q	June 15,23	85,500	58⅞	59¼	56	56⅛	— 2½
690	41	57	41	8,000,000	25	S. O. Kansas	.50Q	June 15,23	1,400	44	44	42	42	— 1½
131	76½	133	83	17,500,000	25	S. O. Kentucky	4Q	Apr. 2,23	1,700	91½	91½	x89	89	— 2
217	170	285	186	3,000,000	100	S. O. Nebraska	5S.A.	Dec.15,22						
675	41⅛	49⅝	35⅛	225,000,000	25	S. O. New York	.35Q	June 15,23	9,000	39	39⅞	37½	37⅞	— 1⅛
585	261	317	274	14,000,000	100	S. O. Ohio	2½Q	Apr. 2,23	50	277	280	274	278	— 2
119½	113½	116	116	7,000,000	100	do pfd	1¾Q	June 1,23						
87	30	39	21	1,806,200	100	Swan & Finch	2½S.A.	Nov. 1,19	100	29	29	26	26	— 5
710	36¼	55¼	43⅛	60,000,000	25	Vacuum Oil Co	$1S.A.	June20,23	8,800	46	46½	44½	45	— ¾
32	20	28	25	100,000	10	Washington Oil Co	20A.	Jan.31,22	10	25	25	25	25	0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Dealers in Standard Oil Securities
25 Broad St. New York

NEW YORK BONDS

Week Ended June 16

	High	Low	Last	Ch'ge
Atlantic Ref. 5s	98⅞	97	98⅛	— ⅝
Barnsdall 8s	99½	96	97	—2⅜
Empire Gas & F. 7½s	93⅜	92	92	—1⅝
Humble 5½s	98	97½	97½	— ⅜
Marland 8s	106¾	105⅞	105⅞	— ½
do 8s war	125¼	124	125¼	+ ¾
do 7½s	101	100	100¾	+ ⅜
Mexican Pet. 8s	108⅛	108	108⅛	+ ⅛
Pan-American 7s	103	102¾	103	0
Pierce Oil 8s	94	94	94	+ ⅜
Prod. & Ref. 8s	107	106½	106¾	— ½
do 8s war	126	126	126	+2
Sinclair Cons. 7s	99½	98	98¼	—1
Sinclair C.O.P. 5½s	98½	97½	97⅝	— ¾
do 6s	99⅝	97½	97⅝	—1⅜
Sinclair P.L. 5s	87	85	85½	—1¾
S.O. California 7s	106⅛	104	104⅜	—1¾
Tide Water 6½s	103¼	102⅞	103¼	+ ¼
Union of Calif. 6s	101	101	101	0
Union Tank Car 7s	104	103¾	103¾	— ¼

NEW YORK CURB BONDS

Week Ended June 15

	High	Low	Last	Ch'ge
Anglo-American 7½s	102¾	102¾	102⅝	— ⅛
Cities Service 7s C	92⅛	92⅛	92⅛	0
do 7s D	91½	90½	90½	— ½
Galena Signal 7s	105	103	103	—2
Gen. Asphalt 6s	101	100⅛	100⅛	+ ⅛
Gen. Petroleum 6s	97½	97½	97½	0
Gulf Oil 5s	96	95	95	— ¼
Maracaibo 7s	225	217	222	0
S.O.N.Y. 7s '25	102½	102	102	— ½
do 7s '26	104⅜	104¼	104¼	—1
do 7s '27	105½	105¼	105¼	+ ¼
do 7s '28	106	106	106	0
do 7s '31	107⅝	107¼	107¼	— ¼
do 6½s	107	106⅛	106½	— ½
Sun Oil 7s	102	102	102	— ¼
Tidal Osage 7s	104	103½	103½	— ½
United Oil Prod. 8s	100	95½	96	—4½
Vacuum 7s	106½	106½	106½	— ⅛
Union of Cal. 6s '25	99⅞	99⅞	99⅞	— ⅛
do 6s'26	99⅞	99⅞	99⅞	— ⅛

PITTSBURGH STOCK EXCHANGE

1922 High	1922 Low	1923 High	1923 Low	Par Value	Stock	Transactions Week Ended June 15 Sales	First	High	Low	Last	Ch'ge
12⅝	8¼	10	6	10	ArkansasNat.Gas	5,460	6⅝	6¾	6	6⅛	— ⅜
55½	21	.....	.....	25	BarnsdallCorp.A	.....	.....	.....	.....	.....	.....
38½	20	.....	.....	25	do B	.....	.....	.....	.....	.....	.....
112¾	64½	112½	112½	100	Columbia Gas	.....	.....	.....	.....	.....	.....
49	42	.....	.....	N. P.	Cosden & Co.	.....	.....	.....	.....	.....	.....
2⅞	2⅛	2⅛	2⅛	10	Kansas & Gulf	.....	.....	.....	.....	.....	.....
81⅛	40	27	25	25	Lone Star Gas	1,245	24½	25	24½	25	+ ½
58⅞	45¾	58	51	50	Manuf. Light	654	53½	55	53⅛	53¾	+ ¼
45	23¾	59¼	30⅛	N. P.	Marland Oil	.....	.....	.....	.....	.....	.....
15⅜	12¾	12	11¼	N. P.	Middle States	.....	.....	.....	.....	.....	.....
23	15⅛	19	12½	1	Ohio Fuel Oil	1,070	13	14	13	13½	+ ½
62	44⅛	65½	31¼	25	OhioFuelSupply	819	32¾	33	32¼	32½	0
26¾	19	22⅜	18⅝	25	Okla. Nat. Gas	210	19⅝	20	19⅝	20	+ ¼
4	2	2⅞	1⅞	5	Okla.Prod.&Ref.	.....	.....	.....	.....	.....	.....
.....	.....	74½	74½	50	Pan-American B	.....	.....	.....	.....	.....	.....
11	6	10½	7½	5	Pittsburgh O.&G.	.....	.....	.....	.....	.....	.....
65¾	57½	58½	50	13.40	Royal Dutch	.....	.....	.....	.....	.....	.....
14⅞	8¾	14	9	10	SaltCreekCons.	3,845	9⅜	9½	9	9	— ¼
57¾	8	55⅞	32	N. P.	Sinclair Cons	.....	.....	.....	.....	.....	.....
47⅞	46½	.....	.....	25	The Texas Co.	.....	.....	.....	.....	.....	.....
14⅝	10	13⅛	9⅞	N. P.	Tidal Osage	45	10¼	10¼	†9⅞	10	.....
18⅛	9¾	14	10⅛	N. P.	Transcontinental	.....	.....	.....	.....	.....	.....
25	24½	27¼	23¾	25	UnionNat.Gas	1,260	25¼	26	25¼	26	+ ½

PITTSBURGH CURB MARKET

1922 High	1922 Low	1923 High	1923 Low	Par Value	Stocks	Transactions Week Ended June 15 Sales	First	High	Low	Last	ch'ge
.....	.....	15	15	.....	Central Ky. Gas	.....	.....	.....	.....	.....	.....
4⅞	1	1½	½	10	Colombia Synd.	1,000	½	½	½	½	0
8	1¾	2¾	.70	5	Duquesne Oil	1,400	.70	.75	†.70	.70	—.05
.....	.....	37	11½	10	Forest Oil	.....	.....	.....	.....	.....	.....
.....	.....	1¼	1	1	Grant Oil	100	1	1	1	1	.....
71	50	68	52½	25	Gulf Oil Corp.	220	52¾	53	52⅝	52⅝	—3½
.12	.02	.03	.02	1	Homer Union	2,000	.02	.02	†.02	.02	.....
.....	.....	24½	18	N.P.	International Pet	.....	.....	.....	.....	.....	.....
9	6½	8½	5	10	Marshall Oil	100	5	5	5	5	.....
.42	18	.36	23	1	Mexican Wyoming	4,500	.23	.23	.23	.23	—.02
1½	1	2¾	1¾	.....	Oklahoma Eastern	1,450	1¾	1¾	1¾	1¾	0
1¼	1	2	.78	10	Omar Oil & Gas	500	.78	.78	† 78	78	.....
52	29	22¼	12	5	States Oil	127	13	14	13	14	+1
.....	.....	80	80	100	Southwest Pa. Pipe	.....	.....	.....	.....	.....	.....
.....	.....	25	25	25	Tropical Oil	.....	.....	.....	.....	.....	.....
.09	.05	.05	.03	1	Twin City O. & G.	.....	.....	.....	.....	.....	.....
.06	.03	.....	.....	1	West Texas	.....	.....	.....	.....	.....	.....

*New High †New Low xEx Dividend

NEW YORK CURB MARKET

1922 High	1922 Low	1923 High	1923 Low	Par Value	Stocks	Transactions Week Ended June 15 Sales	First	High	Low	Last	Ch'ge
13	6¾	10	5¾	10	Ark. Nat. Gas	500	6½	6½	6	6	— ¾
9¾	3¼	7¾	4⅝	25c	Carib. Synd. ctf.	3,700	4⅞	5⅛	4½	4¾	— ⅛
242	158	193	144½	100	Cities Service	1,025	153¾	155	†144½	144½	—9
72	51	70	66⅝	100	do pfd	1,800	67½	67½	†66⅝	66⅞	— ⅞
25½	16¾	19½	14¾	10	do bankers sh.	1,100	15¾	15¾	15⅛	15⅛	— ¼
5	1¼	7¾	2¾	N.P.	Creole Syndicate	11,900	4¾	4¾	3⅞	4	— ⅛
.....	.....	18¾	13¾	N.P.	Derby O. & R.	300	15½	15½	14½	14½	— ¾
2¼	65	1	.55	5	Federal Oil	8,200	.60	.75	.60	.65	+.10
19½	8¾	19¼	16⅜	N P.	Fensland Oil	.....	.....	.....	.....	.....	.....
.....	.....	38	24	25	General Petroleum	700	34	34¼	32¾	33	— ¾
9½	2½	7¾	8	N.P.	Gilliland Oil	1,000	6	6	4½	4¾	—1
7¾	78	2⅛	.81	10	Glenrock Oil	8,800	.....	1⅛	.85	.94	+.12
71½	48¼	68¼	51½	25	Gulf Oil Corp.	7,000	55½	55½	52½	53¼	—2¼
26½	2¼	4	1	N.P.	Kirby Petroleum	200	2	2	2	2	— ¾
49¼	39½	58	45	N.P.	Mammoth A	100	55⅞	55⅞	55⅞	55⅞	+2⅞
27½	12¾	25¾	9⅛	N.P.	MaracaiboOilExp.	16,500	22¾	22¾	20⅞	21½	—1¼
10	1	4¾	2¾	N.P.	Marland of Mexico	3,900	3	3½	3	3	— ¾
14¾	6¼	11⅛	8⅞	10	Merritt Oil Corp.	.....	.....	.....	.....	.....	.....
19	9¾	20¼	14⅝	10	MountainProd.	3,100	15	15¼	†14⅝	‡14¾	— ¼
13¾	5¾	15⅛	10¼	5	Mutual Oil Co.	22,600	11	11¼	†10¼	10½	— ⅝
88	40	52	27	10	New Eng. Fuel Oil	100	32	32	32	32	+2
3	.67	1 1⅛	.70	10	Omar O. & G.	8,000	.....	.85	.76	.76	0
.....	.....	15	2½	N.P.	Peer Oil Corp.	1,000	3	3	†2½	2½	— ½
9¾	4¾	14¾	9⅛	10	Pennok Oil	4,700	13	13¼	12¾	12¾	— ¾
14¾	10	14	9	10	Salt Creek Cons.	1,000	9¼	9¼	9	9	0
22	12⅛	25¼	17⅛	10	Salt Creek Prod.	4,600	18	18	†17⅛	17⅛	— ¾
5	2¼	4⅞	2¾	5	Sapulpa Refining	6,700	3	8¼	2⅞	3	— ⅛
3½	.80	4	2⅜	5	Seaboard O. & G.	10,700	2⅝	2¾	2¾	2⅝	— ⅛
21	12¼	26¾	14	N.P.	Southern States	7,100	17¾	18¼	16	17½	— ⅝
34	23	30	29	5	Ventura Cons.	200	29	29	29	29	.....
7¾	2¼	10⅞	6⅛	5	Wilcox O. & G.	23,300	7¾	7⅞	6¾	6¾	— ⅛